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NATURAL RESOURCES OF JAPAN

(revised edition)

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(Revised Edition)

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NATURAL RESOURCES OF JAPAN [1]

Section I

INTRODUCTION

This summary of the natural resources of Japan gives an overall view of an island country, somewhat smaller than the state of California, which has a homogeneous population of about 76,000,000 concentrated in a relatively few small lowlands. In this report are analysed, in a broad way, the two main categories of geographic factors: The natural environment on the one hand, and cultural occupance on the other. In considering the inter-relationships between these factors, the report depicts the adjustment of a dense population to an environment which is favored by a healthful climate and productive fishery and forest resources, but subject to limitations imposed by its small land area and restricted mineral and agricultural resources.

This treatment may clarify a question often raised: Japan is on the road back--but to what? A definitive answer is difficult, yet an outline of the economic course along which Japan must travel in the years immediately ahead can be charted when its natural assets and limitations are understood.

Many details have been omitted here because Section II and III are designed to accompany oral presentation. The last two sections, which are intended for perusal after such orientation conferences, will supply reference data for those who wish to pursue the subject further.

1/ This report was prepared by the Natural Resources Section, General Headquarters, Supreme Commander for the Allied Powers, Tokyo, April 1947. (Reproduced by permission of the Civil Affairs Division, War Department).

Section II

GENERAL GEOGRAPHY

1. DEFINITION AND POSITION OF JAPAN PROPER

a. Japan Proper, as defined by SCAP Memoranda to Japanese Government, 29 Jan and 23 March 46, (See Plate 1) consists of four islands: Hokkaido ("North Sea District"), Honshu ("Main Island"), Shikoku ("Four Provinces"), and Kyushu ("Nine Provinces"), and the approximately 1,000 adjacent small islands.

b. Islands and island groups included in Japan Proper:

(1) Sado
(2) Tsu Group
(3) Okushiri
(4) Izu Group, including Sofu-gan
(5) Oki Group

c. Islands and island groups excluded from Japan Proper:

(1) Utsuryo (Ullung), Lianoburt Rocks (Take), and Quelpart (Saishu or Cheju)
(2) Ryukyus Group south of latitude 30° N
(3) Kuchino, south of Kyushu
(4) Nanpo Group
(5) Bonins (Ogasawara) Group
(6) Volcano (Kazan or Iwo) Group
(7) Kurils (Chishima)
(8) Habomai (Hapomaze) Group (off NE Hokkaido)
(9) Shikotan
(10) All other outlying Pacific islands

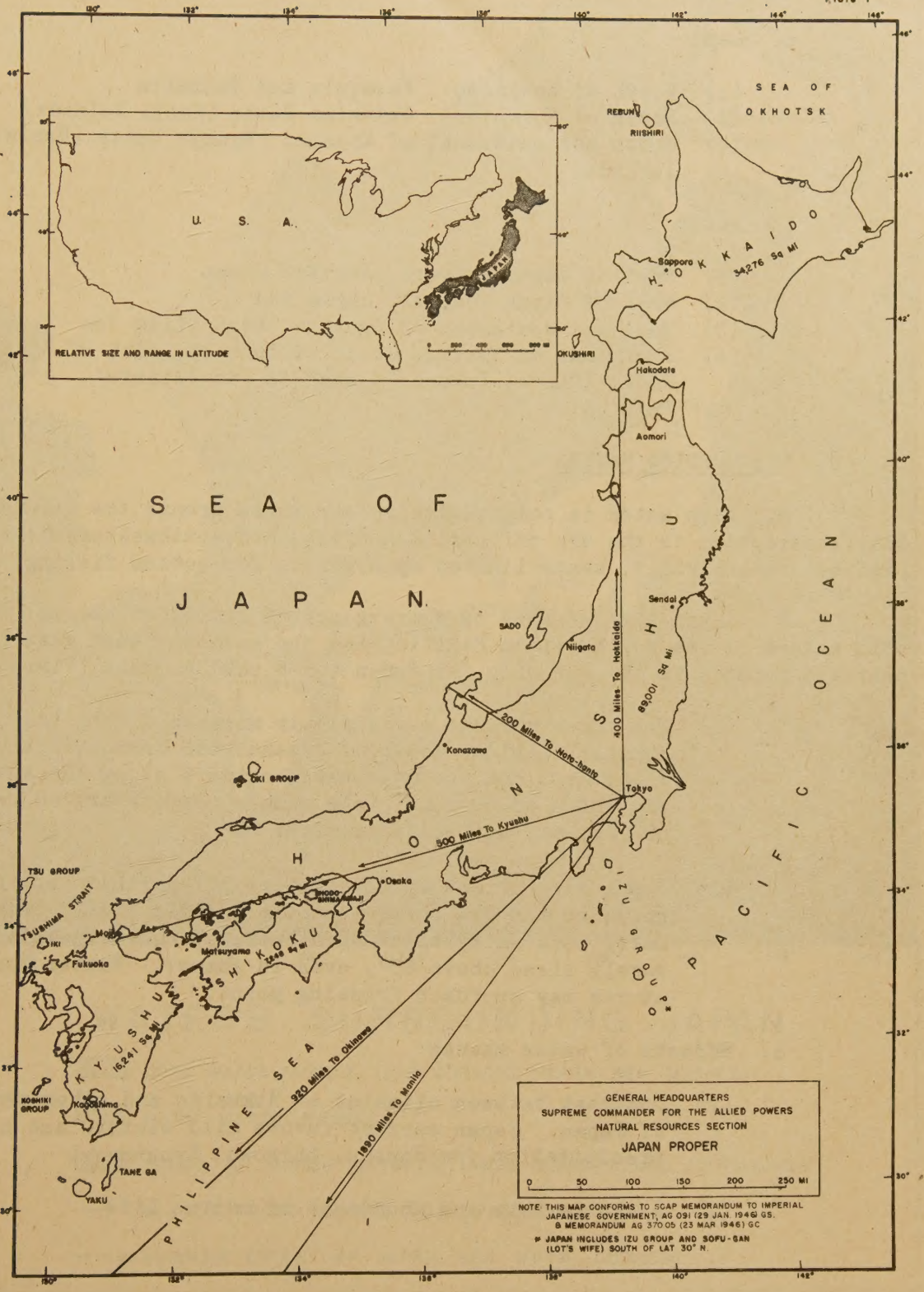
d. Japan is a mountainous island festoon off the coast of Asia.

(1) Climatic consequence: Marine climate, monsoons, many variations owing to difference in altitude

e. The Latitudinal spread (30° to 45° 30' N) is comparable to that from Florida to Maine (See Plate 1 Inset).

(1) Climatic consequence: Subtropical in southern Khushu to cold winters, mild summers in Hokkaido

Plate I


SEA OF OKHOTSK
REBUN
RIISHIRI
HOKKAIDO
34276 Sq Mi
Sapporo
OKUSHIRI
Hakodate
Aomori
SEA OF JAPAN
SADO
Niigata
Sendai
HONSHU
89001 Sq Mi
400 Miles To Hokkaido
200 Miles To Noto-hanto
Kanazawa
OKI GROUP
Tokyo
500 Miles To Kyushu
PACIFIC OCEAN
IZU GROUP*
TSU GROUP
TSUSHIMA STRAIT
IKI
Fukuoka
Osaka
Matsuyama
SHIKOKU
7249 Sq Mi
KYUSHU
15241 Sq Mi
KOSHIKI GROUP
Kagoshima
TANE GA
YAKU
PHILIPPINE SEA
920 Miles To Okinawa
1990 Miles To Manila
U. S. A.
JAPAN
RELATIVE SIZE AND RANGE IN LATITUDE
0 200 400 600 800 MI
GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
NATURAL RESOURCES SECTION
JAPAN PROPER
0 50 100 150 200 250 MI
NOTE: THIS MAP CONFORMS TO SCAP MEMORANDUM TO IMPERIAL JAPANESE GOVERNMENT, AG 091 (29 JAN. 1946) GS, & MEMORANDUM AG 370.05 (23 MAR 1946) GC
* JAPAN INCLUDES IZU GROUP AND SOFU-GAN (LOT'S WIFE) SOUTH OF LAT 30° N.

2. SETTING

a. Land

(1) North of Hokkaido: Karafuto and Sakhalin
(2) North of Hokkaido: Chishima Retto (Kuril Islands)
(3) South and southwest of Kyushu: Ryukyu Retto (Nansei Islands)

b. Water

(1) East of Japan Proper: Pacific Ocean
(2) West of Japan Proper: Japan Sea
(3) West and southwest of Kyushu: East China Sea
(4) Southeast of Kyushu, south of Shikoku, east of Ryukyu Retto (Nansei Islands), west of Izu Islands: Philippine Sea

3. SURROUNDING WATERS

a. Deep water is comparatively near shore around the islands. Single exception is the sea off northern Kyushu and southwestern Honshu. Limited coastal shelf, hence limited opportunity for bottom fishing.

b. Japan lies at zone of convergence of two water masses, the cold waters of the northwestern Pacific, and the warm-surfaced mass known near the islands as the Kuroshio, or Japan (or Black) current (Plate 2).

(1) The Japan current moves slowly northward from the equator, divides south of Kyushu, one branch to the Japan Sea, and the main mass eastward along the southern shore of Honshu. Late summer temperature averages 82° F; late winter temperature 68°

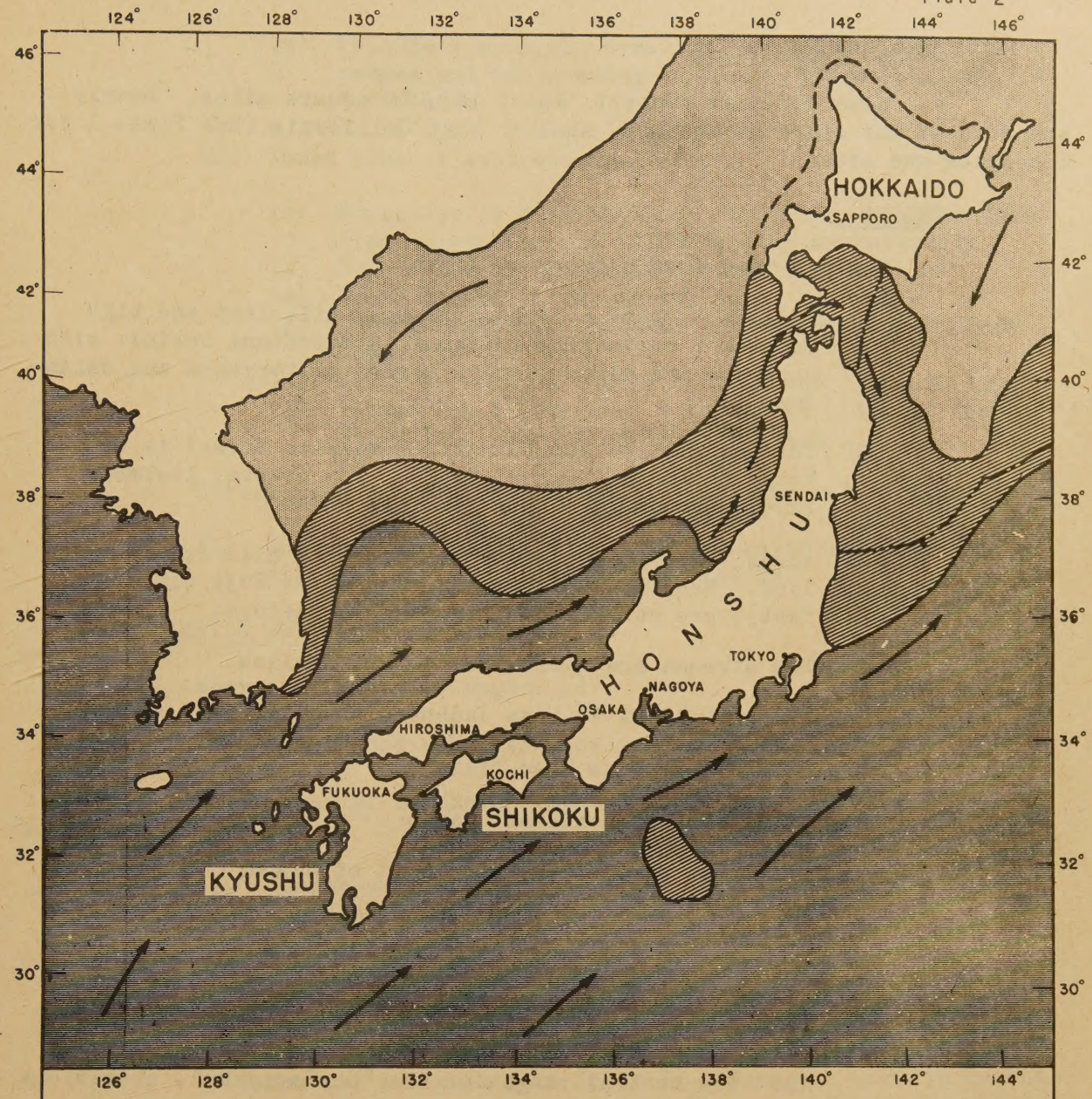
(2) Japan current met by cold waters off northern Honshu, known as the Oya current on the Pacific side. This water less salty than Japan current, and temperature rarely rises above 65°, even in summer. Winter temperatures may approach freezing point.

c. Effects of water masses

(1) Contrast between climates of Hokkaido and other parts of Japan. Japan current favors mild winters and high precipitation for Honshu, Shikoku, Kyushu.

(2) Great variety and abundance of marine life.

Plate 2



WATERS SURROUNDING JAPAN

COLD WATER MASSES (OYA CURRENT, JAPAN SEA MASSES)

WARM WATER MASSES

ZONES OF MIXING BETWEEN LARGE MASSES, AND UPWELLINGS

—— - WINTER FRONT OF OYA COLD WATER MASS

— — — SUMMER EXTENT OF JAPAN SEA WARM CURRENT

4. AREA AND DISTANCES

a. Area of Japan Proper: About 147,000 square miles. Nearly the size of the state of Montana; smaller than California (See Plate 1 for distances and areas)

5. RELIEF

a. General land-form pattern of Japan

(1) A thick core of moderately rugged hill land and high mountains containing numerous intermontane basins, with a narrow and discontinuous border of terraces and delta-fans.

(2) The largest lowland (about 3.5 million acres) is the Tokyo or Kanto (Kwanto) Plain. The coastal lowlands rarely extend more than 30 miles inland.

(3) About 75 to 80 percent of the area is hill or mountain land. Many volcanic cones, such as Mt Fuji (12,389 feet), are conspicuous topographic features.

(4) The streams are short, swift, and shallow.

(5) The west coast is less indented than the east coast.

b. Physiographic regions (See Plate 3)

(1) Outer zone of northeast Japan

(a) That part of Hokkaido east of Sapporo
(b) Northeastern Honshu

1. Kitakami and Abukuma highlands
2. Kitakami and other lowlands

(2) Inner zone of northeastern Japan

(a) The central range, or the "Ou Sammyaku", elevations to 7,000± feet
(b) Intermontane basins
(c) Western range
(d) Western plains

(3) Fossa Magna

(a) Transects center of Honshu
(b) Volçanoes of the Fuji chain

(4) Outer zone of southwestern Japan

(a) Principal mountain area is a series of parallel ranges and intervening valleys. Elevations to 6,000± feet

(5) Inner zone of southwestern Japan

(a) Mountains of central Japan, including the Japanese Alps, elevations to 10,000± feet near Matsumoto
(b) Noto Peninsula and neighboring lowlands
(c) Kinki basins (Biwa, Kyoto, Nara, and Osaka)
(d) Low mountains of Chugoku; highest elevation about 4,000 feet
(e) Hilly terrain; northern Shikoku and northern Kyushu
(f) Inland Sea depression; a submerged block of low but hilly land, elevation to 2,000 feet

c. Correlation between physiographic divisions and geology:

(1) The "median dislocation line" separates two generally different types of geologic structure.

6. CLIMATIC REGIONS (See Plate 4)

a. Hokkaido (Plate 4, Region 1)

(1) Long, cold winters; snow from November to April

b. Outer zone of northern Honshu and southern Hokkaido (Plate 4, Region 2)

(1) Summer warm; winter freezing. Precipitation moderate; average annual 40-60 inches.

c. Japan Sea Coast (Plate 4, Region 3)

(1) Winter: Heaviest precipitation of year; much cloudiness; snow cover of one foot or more. Snow accumulations heavier in 3a than in 3b or 3c. Summer: warm in 3a and 3b; mild in 3c. Annual rainfall generally greater than 60 inches.

d. Mountains and valleys of central Japan (Plate 4, Region 4)

(1) Continental-type climate in the intermontane basins; high temperatures in summer, freezing in winter. Precipitation low; mean annual 44 inches at Matsumoto.

e. Southeastern Honshu (Plate 4, Region 5)

(1) Warm Kuroshio current brings mild winters and warm

Plate 3

PHYSIOGRAPHIC REGIONS OF JAPAN
1. Outer Zone of Northeast Japan
2. Inner Zone of Northeast Japan
3. Fossa Magna
4. Outer Zone of Southwest Japan
5. Inner Zone of Southwest Japan
MDL Median Dislocation Line
HOKKAIDO
MT ASAHI
7,511'
SAPPORO
HONSHU
OU MOUNTAINS
KITAKAMI MOUNTAINS
NIIGATA
NOTO PENINSULA
MDL
ABUKUMA MOUNTAINS
MATSUMOTO
MT FUJI
12,389'
TOKYO
KANTO PLAIN
NAGOYA
KYOTO
OSAKA
CHUGOKU MOUNTAINS
INLAND SEA
MDL
FUKUOKA
MT TSURUGI
3,340'
MT KUJU
5865
SHIKOKU
KYUSHU
GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
NATURAL RESOURCES SECTION
0 100 200 MILES
After Hall & Watanabe, in Smith & Good (1943)

summers to eastern central Honshu. High precipitation; mean annual at Tokyo 64 inches. In September and October typhoons bring violent downpours.

f. Inland Sea area (Plate 4, Region 6)

(1) Sufficiently land-locked to have hot summers, cool winters. Precipitation moderate. Typhoons in September and October.

g. Western Kyushu (Plate 4, Region 7)

(1) Summer hot; winter mild. Precipitation high; mean annual at Shimonoseki 67 inches.

h. Outer zone of southwestern Japan (Plate 4, Region 8)

(1) Mildest winters in Japan. Precipitation high. Typhoons most frequent between July and September.

7. VEGETATION (See Plate 5)

a. Natural vegetative cover mainly forests of many different species. Only a small area naturally barren, grassland, or marsh.

b. Three principal forest types (Plate 5) named according to dominant tree groups.

(1) Northern conifer type: Northern Hokkaido and high mountains elsewhere. Fir, spruce, hemlock, birch, aspen, larch.

(2) Deciduous hardwood type: Northern Honshu, southern Hokkaido, and mountains elsewhere. Beech, oak, maple, ash, chestnut, elm, paulownia, cryptomeria, pine.

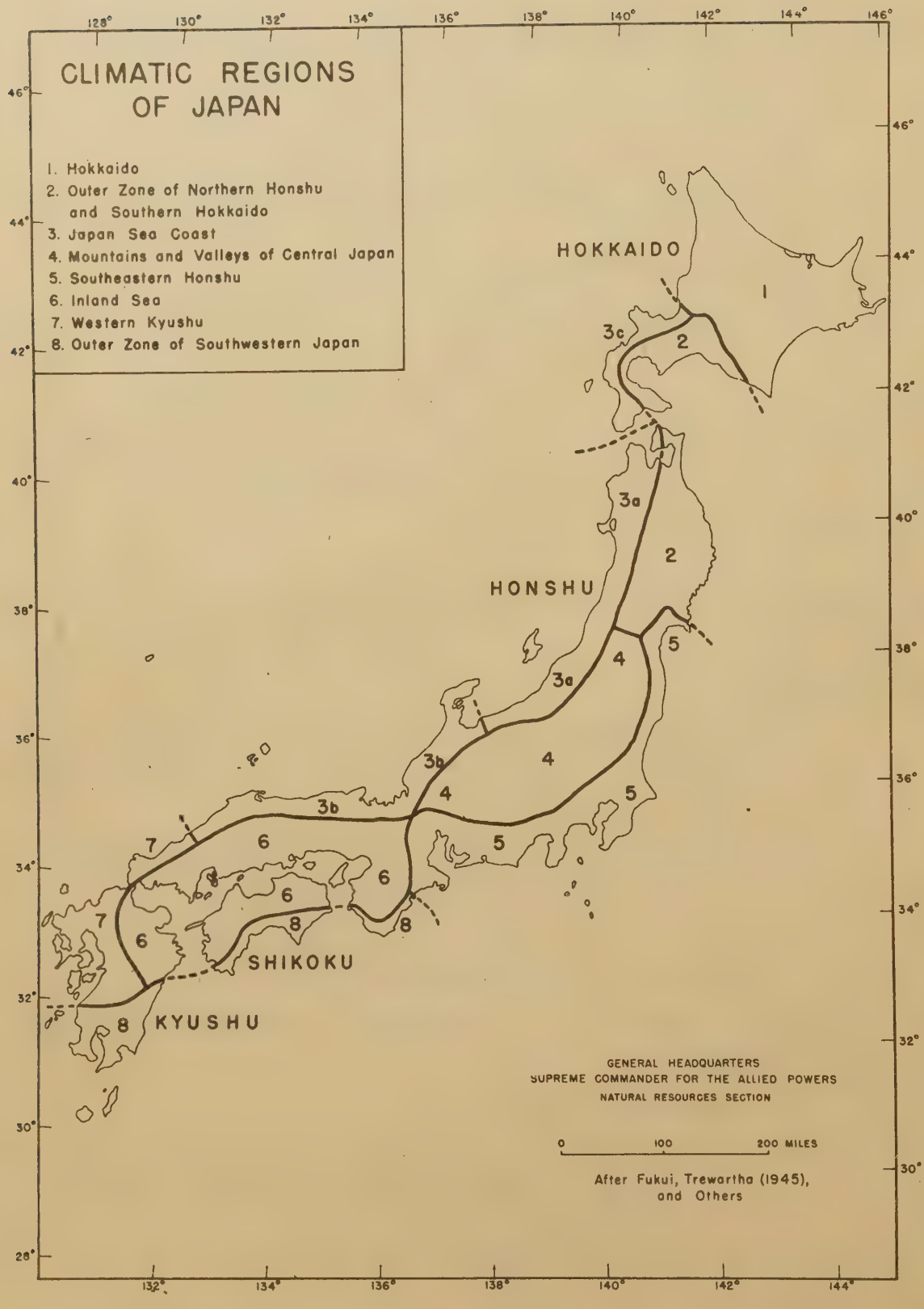
(3) Evergreen hardwoods: Southern Honshu, Shikoku, Kyushu. Live oaks, camphor, camelia, bamboo.

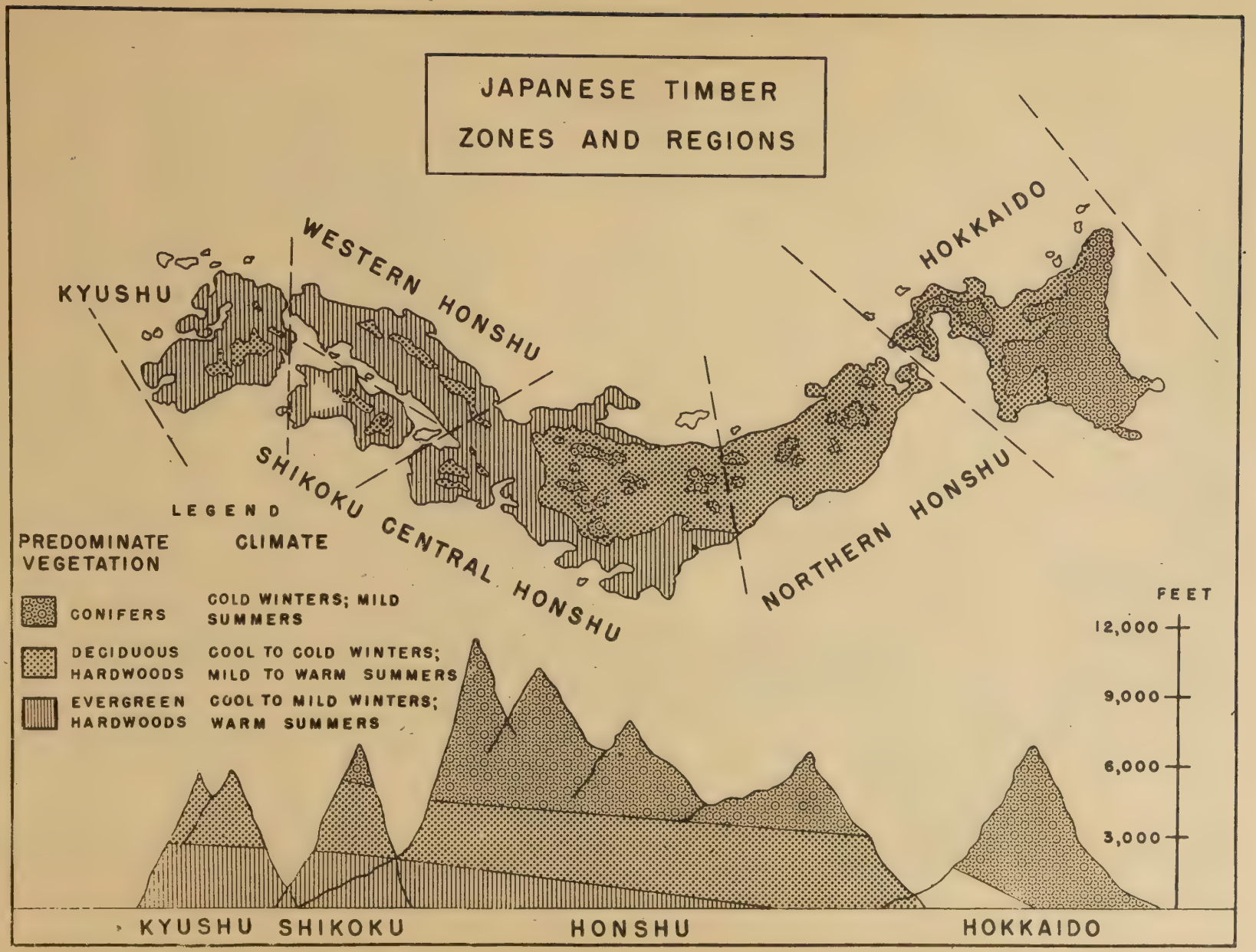
c. Original vegatation has been changed considerably by cutting, fires, reforestration.

(1) Present cover includes:

(a) Cultivated land, settlements, and roads: About 22 percent of total area, mainly lowland. Small cryptomeria or pine woodlots frequent in cultivated districts.

Plate 4


CLIMATIC REGIONS OF JAPAN
1. Hokkaido
2. Outer Zone of Northern Honshu and Southern Hokkaido
3. Japan Sea Coast
4. Mountains and Valleys of Central Japan
5. Southeastern Honshu
6. Inland Sea
7. Western Kyushu
8. Outer Zone of Southwestern Japan
HOKKAIDO
HONSHU
SHIKOKU
KYUSHU
GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
NATURAL RESOURCES SECTION
0 100 200 MILES
After Fukui, Trewartha (1945), and Others


JAPANESE TIMBER
ZONES AND REGIONS
KYUSHU
WESTERN HONSHU
SHIKOKU
CENTRAL HONSHU
NORTHERN HONSHU
HOKKAIDO
LEGEND
PREDOMINATE VEGETATION
CLIMATE
CONIFERS
COLD WINTERS; MILD SUMMERS
DECIDUOUS HARDWOODS
COOL TO COLD WINTERS; MILD TO WARM SUMMERS
EVERGREEN HARDWOODS
COOL TO MILD WINTERS; WARM SUMMERS
FEET
12,000
9,000
6,000
3,000
KYUSHU SHIKOKU
HONSHU
HOKKAIDO

(b) Genya, or "wild" lands: Grass or sasa (dwarf bamboo) covering. Exact extent unknown, but may reach 20 percent of total area.
(c) Barren, waste, and eroded land: Probably two percent of area.
(d) Marshes, water surface, miscellaneous: Three percent of area.
(e) Trees, coppice, and brush: 53 percent of total area.

(2) Appearance of present "forests"

(a) Remaining virgin stands few.
(b) Monocultural plantings frequent; cryptomeria, pine, cypress.
(c) Probably 60 percent of "forest" is brush and coppice for charcoal and firewood. Oaks are the principal species.
(d) Approximately five percent of the forest acreage is cut-over land at any given time.
(e) Greater part of the standing timber under 30 years of age.

(3) Natural vegetation has been changed least in northern conifer areas; most in the evergreen hardwood and cultivated areas.

8. SOILS (See plates 6 and 7)

a. Origin and distribution

(1) Mineral soils are derived from igneous, volcanic, and sedimentary rocks, volcanic ash, tuffs, alluvial and colluvial materials, and unconsolidated marine sediments. Peats (bog soils) are formed from residues of decayed vegetation of marshland species. Most areas of peat soils are in Hokkaido and northern Honshu.

(2) Thin, stony soils (Lithosols) of rugged hill and mountain areas predominate throughout Japan. They are chiefly forest lands.

(3) The best agricultural soils are centered in a number of wide plains and extend into rougher areas along stream valleys and on lower slopes. Such soil areas comprise only 18 percent of the total area of Japan.

(4) Sandy soils are distributed along almost all sea coasts.

Plate 6

RELIEF OF JAPAN
LEGEND
ELEVATION IN FEET
0 TO 600
600 TO 3000
3000 AND OVER
HOKKAIDO
KITAMI COAST
NEMURO LOWLAND
ISHIKARI LOWLAND
TOKACHI LOWLAND
MUTSU PLAIN
ECHIGO PLAIN
HONSHU
SENDAI PLAIN
KANTO PLAIN
TSUKUSHI PLAIN
NOBI PLAIN
SETTSU PLAIN
SHIKOKU
KYUSHU
GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
NATURAL RESOURCES SECTION
0 100 200 MILES
128° 130° 132° 134° 136° 138° 140° 142° 144° 146°
46° 44° 42° 40° 38° 36° 34° 32° 30° 28°

Plate 7

GENERALIZED SOIL MAP OF JAPAN
FEBRUARY 1947
LEGEND
1. Gray-Brown Podzolic
Ando (Dark Colored)
Soil Area
Associated Areas of:
Bog Soils
Half Bog Soils
2. Red and Yellow Podzolic Soil Area
Associated Areas of:
Ando (Dark Colored) Soils
Gray-Brown Podzolic Soils
Reddish-Brown Lateritic Soils
Soil Groups Occuring Throughout Japan:
Lithosols
Alluvial Soils
Planosols
Known Areas In Which Soils Have Been Influenced by Volcanic Ash
HOKKAIDO
HONSHU
SHIKOKU
KYUSHU
Sapporo
Aomori
Sendai
Tokyo
Hiroshima
Osaka
Matsuyama
Fukuoka
1
2
GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
NATURAL RESOURCES SECTION
0 100 200 MILES

b. General soil characteristics

(1) Most of the agricultural soils are loams and silt loams physically suited for tillage.

(2) Natural fertility is low. Even soils of high humus content require heavy fertilization annually for high yields. Soils from volcanic ash are particularly low in phosphate. Essentially all of the agricultural soils respond well to proper fertilization; nitrogen and phosphorous are the elements that give the largest yield increases for most crops.

(3) In general, the upland soils are moderately to strongly acid. The alluvial soils are only slightly acid, particularly if used as rice paddies.

c. Fertility status

(1) The soil fertility trend is upward on the agricultural lands.

(a) A large proportion of the crops harvested is returned to the land as night soil, animal manures, mulches, and composts.
(b) Importation of food and the use of fish, seaweed, and similar marine products in the diet are indirect sources of additional soil nutrients.
(c) Large importations of fertilizer materials, especially phosphate (about 1,000,000 metric tons annually during 1936-40), and fixation of atmospheric nitrogen as nitrogenous fertilizers (400,000 metric tons of nitrogen annually during 1936-40) add greatly to the soil nutrients supply.
(d) Vegetation is removed from non-arable land and applied to agricultural land as compost and ashes.
(e) Leaching of plant nutrients is partially compensated by nutrients in irrigation waters.

(2) The soil fertility trend is downward on the non-arable land.

(a) Forest products are removed for lumber and fuel.
(b) Grasses and shrubs are removed for feed and composts.
(c) Plant nutrients are lost by leaching.
(d) No replacement of any consequence is made.
(e) Sheet erosion is favored for periods on many forest lands by clear-cutting practices.

d. Irrigation, drainage, and erosion

(1) Irrigation is practiced on most of the soil areas used for the production of rice and many of the areas where vegetables are grown. Irrigation makes possible the utilization of drouthy soil areas. Even steep hillsides are used for the production of paddy rice. Stream diversions furnish about 65 percent of the water for irrigation. Reservoirs, lakes, and ponds supply most of the remainder, but wells are also used.

(2) Drainage has been important in reclaiming agricultural soil areas from shallow lakes, bays, and swampy areas. It has also increased the productivity of some poorly drained areas, formerly adapted only to the growth of rice, by increasing the yield of rice and making possible the growth of a winter crop such as wheat or barley. In naturally better drained sites, where the climate is suitable, it is the practice to drain the rice paddies in the fall and grow winter crops on these areas.

(3) Water erosion is active on many of the non-arable, hilly, and mountainous areas of southern Honshu, Shikoku, and Kyushu. Some areas are nearly barren and badly gullied, while many others have lost considerable surface soil by less obvious sheet and rill erosion. Wind erosion is reported to be active in some dark colored, volcanic ash-derived soil areas during certain seasons unless adequate precautions are taken following cultivation.

9. POLITICAL DIVISIONS (See Plate 8)

a. Administrative regions (chiho)

(1) Established in July 1943
(2) Names of regions

(a) Hokkai (all of Hokkaido)
(b) Tohoku (northern Honshu)
(c) Hokuriku (west central Honshu)
(d) Kanto (Tokyo plain region)
(e) Tokai (central Honshu)
(f) Kinki (Kyoto, Osaka, etc)
(g) Chugoku (western Honshu)
(h) Shikoku
(i) Kyushu

(3) Map of these regions in ASF Manual M 354-2B and JANIS 85, Chapter X

PREFECTURES AND ADMINISTRATIVE REGIONS
HOKKAIDO
34,276 Sq Mi
HOKKAI
HONSHU
89,001 Sq Mi
TOHOKU
AOMORI 3,718
AKITA 4,603
IWATE 4,882
MIYAGI 2,806
YAMAGATA 3,600
FUKUSHIMA 5,321
HOKURIKU
NIIGATA 4,856
ISHIKAWA 1,815
TOYAMA 1,644
FUKUI 1,645
KINKI
GIFU 4,062
SHIGA 1,564
KYOTO 1,714
OSAKA 1,824
HYOGO 3,213
NARA 1,485
WAKAYAMA 1,824
MIE 2,226
NAGANO 5,261
GUNMA 2,446
TOCHIGI 2,466
IBARAKI 2,362
SAITAMA 1,466
TOKYO 625
CHIBA 1,964
KANAGAWA 909
KANTO
YAMANASHI 1,724
AICHI 1,962
SHIZUOKA 3,000
CHUBU (TOSAN)
TOKAI
CHUGOKU
SHIMANE 2,268
TOTTORI 1,347
OKAYAMA 2,720
HIROSHIMA 3,267
YAMAGUCHI 2,998
SHIKOKU
7,248 Sq. Mi
KAGAWA 717
TOKUSHIMA 1,600
EHIME 2,788
KOCHI 2,745
KYUSHU
16,241 Sq Mi
FUKUOKA 1,907
SAGA 2,446
OITA 2,446
NAGASAKI 1,574
KUMAMOTO 3,827
MIYAZAKI 2,988
KAGOSHIMA 3,811
GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
NATURAL RESOURCES SECTION
0 100 200 MILES
128° 130° 132° 134° 136° 138° 140° 142° 144° 146°
46° 44° 42° 40° 38° 36° 34° 32° 30° 28°

b. A prefecture is an administrative subdivision of the national government.

(1) Japan is divided into 43 predominantly rural prefectures (ken), 2 urban (fu), 1 territorial administration (Hokkaido), and Tokyo-to (city and prefecture).
(2) Size of prefectures shown in Plate 8 in square miles
(3) Population of prefectures given in ASF Manual M 354-1A
(4) High degree of correlation between prefectural boundaries and watersheds

c. Counties (gun)

(1) Divisions of prefectures
(2) Of social but not political significance

d. Municipalities

(1) Cities (shi)
(2) Towns (machi or cho)
(3) Townships (mura or son)

(a) Buraku are social-economic units, each consisting of about 20 households, a number of which together make up a mura

10. POPULATION 1/

a. Densities: Correlation between area and population; estimated densities:

(1) 73,110,995 enumerated April 1946 for the four islands
(2) 497 persons per square mile for total area
(3) 3,095 persons per square mile of cultivated area
(4) Concentration of population along the Inland Sea, northern Kyushu, and the Tokai region

b. Distribution (April 1946 census)

(1)	Hokkaido	3,488,013
(2)	Honshu	55,194,449
(3)	Shikoku	3,879,672
(4)	Kyushu	10,548,861

c. The six metropolises explained by location or function; statistics from December 1946 estimate:

1/ Statistics given by the Economic and Scientific Section

(1)	Tokyo-to	3,743,325	
(2)	Osaka-shi	1,937,396	Head of bay
(3)	Nagoya-shi	719,302	
(4)	Kobe-shi	443,344	
(5)	Yokohama-shi	706,557	Deep water ports
(6)	Kyoto-shi	914,655	Inland city, the capital for more than a thousand years

d. The Japanese government, in December 1946, estimated that the population of Japan is 75,700,000. Tokyo-to is reported to have a population of approximately 4,500,000 as of the end of December 1946. Census data are, however, inexact.

Plate 9

APPROXIMATE
NORTHERN LIMITS
OF
SEVERAL CROPS
AND
AGRICULTURAL PRACTICES
LIMIT OF RICE
HOKKAIDO
Sapporo
Komori
LIMIT OF MULBERRY
LIMIT OF
SWEET POTATO
LIMIT OF TOBACCO
HONSHU
LIMIT OF TEA
Sendai
LIMIT OF
WINTER CROPS
IN PADDY FIELDS
LIMIT OF ORANGE
Tokyo
Kyoto
Hiroshima
Fukuoka
Matsuyama
LIMIT OF TWO CROPS
OF RICE DURING YEAR
SHIKOKU
KYUSHU
GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
NATURAL RESOURCES SECTION
0
100
200 MILES
128°
130°
132°
134°
136°
138°
140°
142°
144°
146°
46°
44°
42°
40°
38°
36°
34°
32°
30°
28°

Section III

RESOURCES

1. AGRICULTURE (See Plates 9 and 10)

a. General statement

(1) Agriculture the most important single industry

(a) More than 40 percent of national capital invested in it 2/
(b) Approximately 47 percent of population derive all or part of their income from agriculture 3/

(2) Principal features of Japanese agriculture

(a) Small cultivated area in relation to large agricultural population
(b) Small-scale farming
(c) Widespread development of tenancy 4/
(d) Emphasis on food production
(e) Predominant position occupied by rice crop

(3) Agriculture has provided 80 to 85 percent of food requirements of Japan during past twenty years

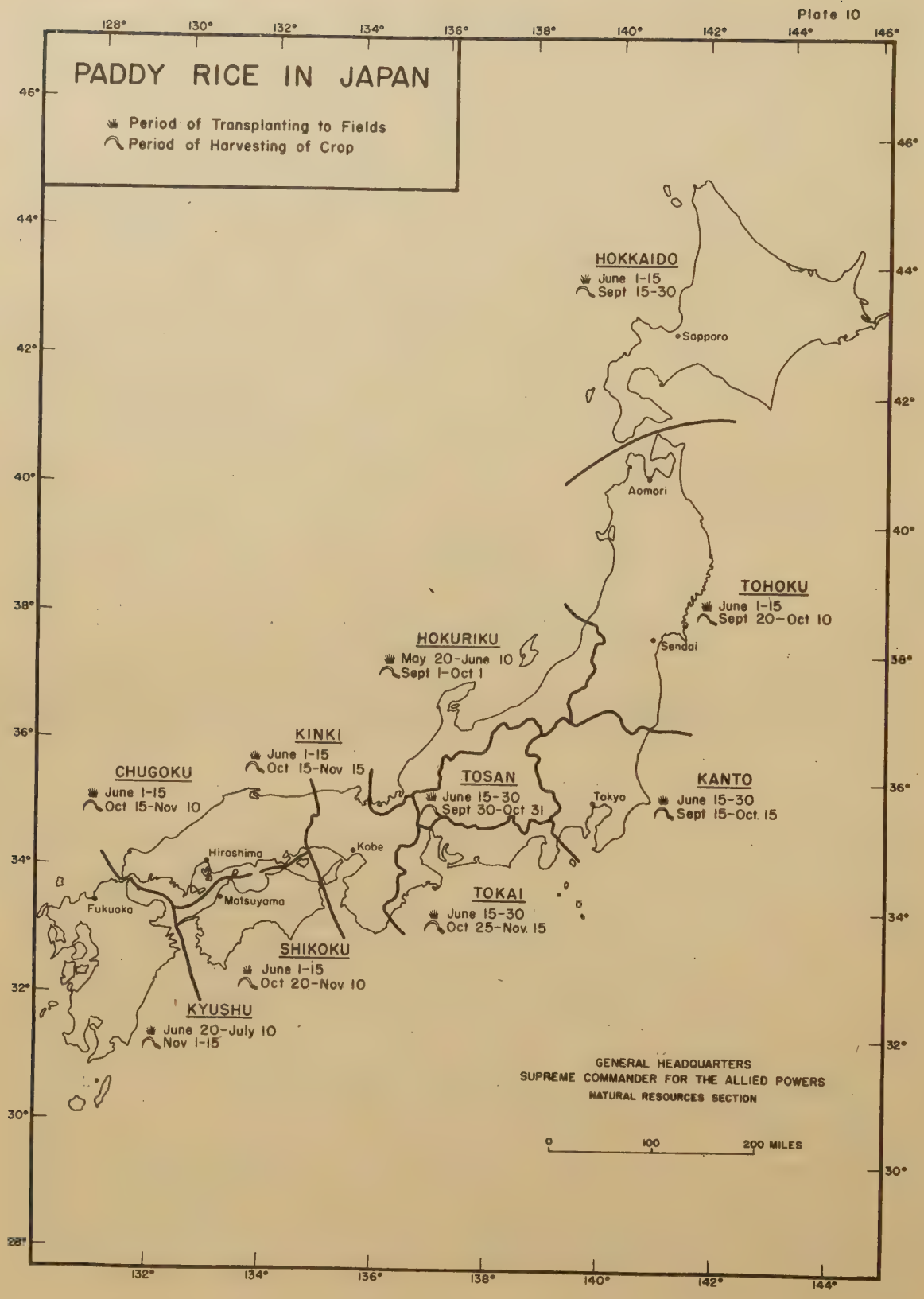
b. Economic factors

(1) Intensity of agriculture reflected by these facts:

(a) Only 14,208,000 acres or 16 percent total land area used for cultivation
(b) Approximately 5,698,000 farms in Japan compared to about 6,800,000 in United States
(c) Average sized acreage of a Japanese farm 2.49 acres. Median acreage is 1.64 acres 2/.

2/ Estimate of Japan Hypothec Bank as of 1946
3/ Results of Agricultural Census conducted by Ministry of Agriculture and Forestry as of 26 April 1946
4/ As a result of land reform laws passed by the Japanese Diet on 11 October 1946, it is anticipated that before 1949 tenants on approximately 2,000,000 of the 2,600,000 cho of land now cultivated by them will be able to purchase the land they cultivate. One cho equals 2.45 acres.

Plate 10


PADDY RICE IN JAPAN
Period of Transplanting to Fields
Period of Harvesting of Crop
HOKKAIDO
June 1-15
Sept 15-30
Sapporo
Aomori
TOHOKU
June 1-15
Sept 20-Oct 10
Sendai
HOKURIKU
May 20-June 10
Sept 1-Oct 1
KINKI
June 1-15
Oct 15-Nov 15
CHUGOKU
June 1-15
Oct 15-Nov 10
TOSAN
June 15-30
Sept 30-Oct 31
KANTO
June 15-30
Sept 15-Oct. 15
Tokyo
Hiroshima
Kobe
Fukuoka
Matsuyama
TOKAI
June 15-30
Oct 25-Nov. 15
SHIKOKU
June 1-15
Oct 20-Nov 10
KYUSHU
June 20-July 10
Nov 1-15
GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
NATURAL RESOURCES SECTION
0
100
200 MILES
128°
130°
132°
134°
136°
138°
140°
142°
144°
146°
46°
44°
42°
40°
38°
36°
34°
32°
30°
28°

(2) Agriculture in Japan gardening rather than farming

(a) Most work done by hand with primitive tools, but these tools well suited to their use
(b) Production per unit area high but production per man low
(c) Many fields made to produce two or more crops per year

1. Practiced widely in central and southwestern Japan
2. Area under cultivation enlarged one-third by multiple cropping

c. Land development

(1) History

(a) Land reclamation increased the arable land area of Japan seven percent or 896,000 acres from 1910 to 1939. The arable land in 1939 was 14,750,000 acres. The arable land area decreased three percent or 432,000 acres from 1939 to 1944, chiefly owing to military and industrial uses of land.
(b) Progressively the expansion of the arable land area has become more difficult. Land now under cultivation includes most of the more productive agricultural areas of Japan.

(2) Present reclamation potentials

(a) An estimated 3,900,000 acres of additional land could be brought under cultivation by the expenditure of comparatively large amounts of capital, labor, and materials. After being reclaimed, much of this land probably would be marginal. Reclamation of such an area would add 25 percent to the present arable area of Japan.
(b) Production on large areas of the cultivated land in Japan can be increased by grading, irrigation, drainage, and storm and flood protection.

d. Agricultural production

(1) Six crops furnish 85 to 90 percent of calories in Japanese diet from indigenous sources: rice, wheat, barley, naked barley, sweet potatoes, and white potatoes

(2) Rice dominates agricultural economy.

(a) Rice occupies approximately 53 percent total cultivated area, and about 42 percent of total crop area.
(b) About 96 percent of rice grown in irrigated lowlands
(c) Rice better adapted than other cereals to long growing season, high summer temperatures, and the heavy rainfall in Japan.
(d) Wheat and barley, next in importance, require temperate climatic conditions, i.e., grown in summer months in northern Honshu and Hokkaido, but in winter months in central and southwestern Japan.
(e) Sweet potatoes limited largely to area south of latitude 38° N., while white potatoes grown extensively north of 38° N

(3) Sericulture suited to Japan because of mild winters, humid climate, and abundant supply of cheap labor

(a) Northern limit approximately latitude 40° N
(b) Limit determined by winter survival of mulberry

(4) Tea production extends north to about latitude 37° N.

(5) Livestock of minor importance in Japan

(a) Production livestock products requires four to six acres to produce as many calories as can be obtained from one acre of cereals.
(b) Japanese depend on fish and plant sources for most of their proteins.

e. Research

(1) 424 institutions have primary function of agricultural research.

(a) Research conducted by imperial and prefectural experiment stations, imperial universities, prefectural agricultural colleges, private institutions, and corporations.
(b) Experiment stations are small and highly specialized.

(2) Application of results of research has caused significant increases in agricultural production.

(a) Yield of silk per hectare increased 400 percent from 1890 to 1940.
(b) Yields per unit area of rice, wheat, common barley, and naked barley increased about 70, 140, 119 and 62 percent, respectively, from the 1878-82 period to the 1938-42 period.

2. FISHERIES (See Plate 11)

a. General statement

(1) Prior to World War II Japan was the foremost fishing country in the world.

(a) Annual catches in home waters were 2,500,000 to 3,500,000 metric tons; catches overseas including those of colonial waters amounted to an additional 2,000,000 to 3,500,000 tons. Total Japanese production of marine products accounted for more than one-fourth of the world's total.
(b) Full-time and part-time fishermen in Japan numbered about 1,500,000.
(c) Japanese fishing boats numbered about 355,000 of which 75,000 were powered.
(d) Japanese fishing operations were world-wide.

(2) Fishery products provided most of the animal protein in the Japanese diet.

(3) Although the greater part of the Japanese fishing products were consumed at home, the production provided needed exports for Japan's trade balance.

b. Explanation of emphasis upon fishing in Japan

(1) Dense population with meager food resources

(2) Insular character and great length of coastline

(3) Coastal concentration of the population

(4) Excellent fishing grounds where warm and cold ocean currents converge

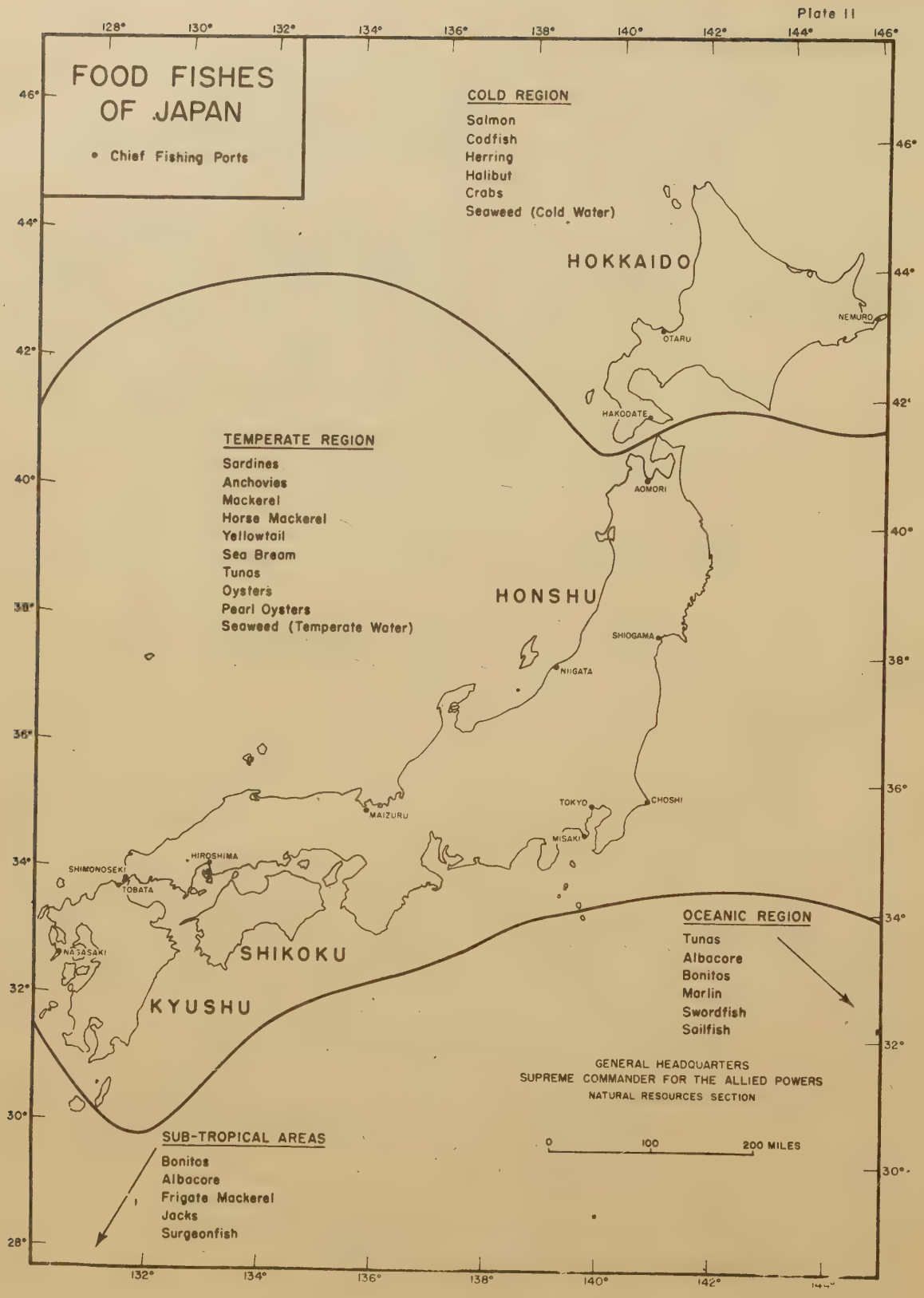
c. Fishing regions

(1) Coastal and offshore waters of Japan Proper

(a) Cold: waters surrounding Hokkaido and Kuril Islands
(b) Temperate. waters off coasts of Honshu, Kyushu, and Shikoku
(c) Subtropical: area south of Japan
(d) Deep-sea: Pacific Ocean east of Japan

(2) Former overseas fishing regions

Plate II


FOOD FISHES OF JAPAN
• Chief Fishing Ports
COLD REGION
Salmon
Codfish
Herring
Halibut
Crabs
Seaweed (Cold Water)
TEMPERATE REGION
Sardines
Anchovies
Mackerel
Horse Mackerel
Yellowtail
Sea Bream
Tunas
Oysters
Pearl Oysters
Seaweed (Temperate Water)
OCEANIC REGION
Tunas
Albacore
Bonitos
Marlin
Swordfish
Sailfish
SUB-TROPICAL AREAS
Bonitos
Albacore
Frigate Mackerel
Jacks
Surgeonfish
HOKKAIDO
HONSHU
SHIKOKU
KYUSHU
NEMURO
OTARU
HAKODATE
AOMORI
SHIOGAMA
NIIGATA
TOKYO
CHOSHI
MISAKI
MAIZURU
HIROSHIMA
SHIMONOSEKI
TOBATA
NAGASAKI
GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
NATURAL RESOURCES SECTION
0 100 200 MILES
128° 130° 132° 134° 136° 138° 140° 142° 144° 146°
46° 44° 42° 40° 38° 36° 34° 32° 30° 28°

(a) In addition to fishing in waters near the Home Islands and former colonies (including the mandated islands), Japan operated salmon and crab fisheries in northern waters of the Okhotsk and Bering seas, trawling in the East China and Yellow seas, whaling in Antarctic waters, and small scale fisheries off the coasts of Alaska, British Columbia, Mexico, Central America, and South America of the Western Hemisphere, and in Indian and Australian waters of the Far East.

d. Ports

(1) The fisheries of Japan are conducted from many small and a few large ports scattered along the coasts of the Home Islands. Some important ports which serve as bases for large-scale operations are Hakodate, Choshi, Shimonoseki, Tobata, and Nagasaki.

e. Marine products

(1) Japan produces a great variety of marine products for food. Several hundred different species of fish alone are eaten in Japan. Among the important edible products are:

(a) Sardines
(b) Herring
(c) Cod and flounder
(d) Cuttlefish
(e) Bonito and tuna
(f) Mackerel
(g) Salmon
(h) Sea bream
(i) Yellowtail
(j) Shellfish
(k) Seaweed
(l) Whale products

f. Aquiculture

(1) The practice of aquiculture (culture of fish, shellfish, and seaweed) is highly developed and illustrative of the importance attached to fisheries by Japanese. Species raised include carp, eel, oyster, clam, and seaweed as well as trout and other fresh water fish. The output from this production contributes considerably to the food supply.

g. Research and education

(1) In keeping with the importance of marine products in the economy of Japan, much emphasis is placed on fishery research and education. Japan has 143 research stations, 32 prefectural schools, two colleges and three departments in its imperial universities which deal with fisheries.

3. FORESTRY

a. Importance of forests

(1) Japan depends on her forests to furnish lumber and timbers, provide pulpwood and veneer logs, produce fuel, regulate stream flow, maintain water tables, prevent serious floods, minimize soil erosion, and supply food and other products.

b. Principal forest types and species (Plate 5)

Type	Species
(1) Coniferous	Cedar, cypress, fir, hemlock, larch, spruce, pines (red, black, white)
(2) Broad-leaved	Oak, beech, maple, ash, chestnut, cherry, birch, elm, aspen, camphor, paulownia
(3) Mixed	Various mixtures of above species
(4) Bamboo	Numerous: 153 species recognized
(5) Wasteland	Called "genya"; treeless or with scattered trees

c. Forest areas

COMPARATIVE FOREST AREA
(Unit 1,000 acres)

Total Land Area		Forest Land and Genya		Commercial Forest	
Area	Percent	Area	Percent	Area	Percent
92,218	100	58,294	62	49,763	53

Note: Area of productive forest per capita: 0.67 acres

FOREST AREAS BY OWNERSHIP
(Unit 1,000 acres)

	Imperial	National	Communal	Private	Totals
Commercial forests	2,757	15,524	8,780	22,702	49,763
Special purpose forests a/	220	1,763	411	682	3,076
Wasteland	247	1,341	1,460	2,407	5,455
Totals	3,224	18,628	10,651	25,791	58,294
Commercial Forest Composition					
Coniferous	698	3,661	2,639	7,566	(14,564)
Planted	(322)	(1,450)	(1,691)	(5,002)	
Natural	(376)	(2,211)	(948)	(2,564)	
Broad-leaved	949	7,616	3,681	9,249	(21,495)
Planted	(2)	(243)	(387)	(1,162)	
Natural	(947)	(7,373)	(3,294)	(8,087)	
Mixed	1,053	3,300	2,157	4,640	(11,150)
Planted	(5)	(423)	(203)	(651)	
Natural	(1,048)	(2,877)	(1,954)	(3,989)	
Bamboo	0	2	23	334	(359)
Denuded	57	945	290	903	(2,195)
Sub-totals	2,757	15,524	8,780	22,702	(49,763)

a/ Special purpose forests are managed under special laws or regulations for their scenic beauty or for their usefulness in various ways such as pretection against soil erosion, floods, winds or tides, head waters control, preservation of water tables, or maintenance of stream flow.

Note: Total area planted including special purpose forests: 17,011,000 acres

Note: Total area of natural forest: 35,668,000 acres

d. Volume and growth data

GREEN TIMBER VOLUME
(Unit 1,000,000 cubic feet)

Total Volume		Softwoods		Hardwoods	
Volume	Percent	Volume	Percent	Volume	Percent
60,708	100	34,916	58	25,792	42

Note: Volume of green timber per capita: 815 cubic feet

VOLUME BY OWNERSHIP
(Unit 1,000,000 cubic feet)

	Imperial	National	Communal, Private, Other	Total
Coniferous	2,864	10,914	21,138	34,916
Old Japan	(1,639)	(5,604)	(20,164)	
Hokkaido	(1,225)	(5,310)	(974)	
Broad-leaved	3,337	15,225	7,230	25,792
Old Japan	(531)	(11,187)	(3,778)	
Hokkaido	(2,806)	(4,038)	(3,452)	
TOTALS	6,201	26,139	28,368	60,708

ESTIMATED AVERAGE ANNUAL GROWTH

Ownership	Forest Area (1,000 acres)	Increment (Cubic feet per acre per year)	Total Annual Growth (1,000 cubic feet)
Imperial	2,757	27	74,436
National	15,524	20	303,753
All Other	31,482	41	1,315,583
TOTAL	49,763	--	1,693,772

Note: Average annual increment per acre per year: 34 cubic feet

Note: Average growing stock per acre: 1,220 cubic feet

e. Reforestation

(1) Area planted (1946): 525,000 acres

(2) Seedlings are planted at the rate of 800 per acre. Planting of nine billion seedlings is planned from 1947 to 1951.

f. Utilization Data

(1) Annual Consumption of Wood

AVERAGE ANNUAL PRODUCTION OF ALL WOOD PRODUCTS
(Unit 1,000,000 cubic feet solid volume)

Period	Lumber and Timbers	Fuelwood	Total
1926-1930	474	1,226	1,700
1931-1935	563	1,316	1,879
1936-1940	906	1,600	2,506
1926-1940 average	648	1,380	2,028
1946	337	556	893

COMPARATIVE AVERAGE ANNUAL CUT AND GROWTH 1937-1943
(Unit 1,000,000 cubic feet solid volume)

Lumber a/	Fuelwood	Total Cut	Growth	Cut: Growth
1,069	2,331	3,400	1,694	2: 1

a/ Lumber as used here includes round timbers, sawed boards and timbers, pulpwood and veneer.

Note: Average annual consumption of solid wood per capita 1926-1940: 30 cubic feet

Note: Average annual growth of green timber per capita (1946): 22 cubic feet

(2) All wood products (except fuelwood): Current requirements and production:

(a) The economy of Japan depends heavily on wood, despite recent industrial progress. Ninety-nine percent of the population lives in wooden houses; in cities like Tokyo, only one percent of the 1,100,000 prewar buildings was constructed of materials other than wood. In industry, rayon manufacture depends entirely on wood pulp for fiber. Fishing fleets are composed mainly of wooden ships.

DEMAND, ALLOCATION, AND PRODUCTION OF WOOD PRODUCTS, 1946
(Unit 1,000 cubic feet)

	Estimated Demand	Allocation	Production
Mine timbers	82,780	81,000	68,330
Poles	16,110	11,150	1,540
Railroad ties	54,540	26,490	11,100
Veneer (for plywood)	17,950	17,950	9,660
Pulpwood	119,400	64,480	31,700
Lumber	597,500	423,410	214,210
TOTALS	888,280	624,480	336,540

Lumber Usage	Estimated Demand	Allocation	Production
Housing	289,000	214,000	
(Govt use)		(94,000)	
Public works	150,000	80,000	
Casks	5,350	5,000	Satisfactory
Agric equipment	4,900	7,380	
Matches	3,750	4,520	data not
Wooden ships	16,600	15,000	
Fishing ships	16,700	15,200	available
Steel ships	3,680	3,700	
Railroad cars	7,340	4,400	
Automobiles	3,680	2,800	
Miscellaneous a/	96,500	71,410	
TOTAL	597,500	423,410	

a/ Included in "Miscellaneous" are such items as boxes, wooden clogs, furniture, hardwood goods, handles, sporting goods, pencils, excelsior, barrels and others.

(b) Occupation Forces: Requirements for troop and dependency housing: 500 million board feet. (This requirement, which represents about eight percent of lumber and special timber production, was virtually completed by 1 January 1947. Additional requirements are expected to be small.)

(c) Japanese housing

Houses destroyed or torn down during war	3,000,000
Houses required for repatriates	800,000
Houses annually depreciated or war-delayed construction	400,000
Total requirements	4,200,000
Total prewar houses	16,000,000

Estimates of construction requirements are calculated 15 tsubo (534 square feet) per house, requiring about 4,800 board feet. From 2 September 1945 to 1 January 1947, 300,000 houses requiring 1,500,000,000 board feet are reported to have been constructed. (Note: Many emergency structures requiring 2,400 board feet or less have been built. However, many other buildings, such as theaters, dance halls, restaurants, or shops requiring much more lumber per structure have been built with black-market lumber.)

(d) Sawmills (as of 30 November 1946)

Total reported	18,820
Total in operation	16,042
Rated horsepower in operation	310,000
Annual milling capacity (at 50 bd ft per H P per day)	3,750,000,000
Employees	170,000

Lack of repairs, replacements, lubricants, and sometimes electric power are the principal causes for non-operation.

(e) Plywood Requirements and Production (4 mm thick)

Prewar production (1935-41): 470,000,000 square feet annually

Occupation Forces requirements: 35,000,000 square feet total

Production - 1946: 128,000,000 square feet

One-fourth of Japan's 235 veneer and plywood plants were damaged or destroyed during the war. Shortage of materials holds the industry to about one-half rated capacity.

(f) Pulpwood

1. Wood pulp mills in Japan consume much less wood than other wood-using industries such as lumber and charcoal. From a total annual growth per year of 1,693,000,000 cubic feet, only a little over 30,000,000 cubic feet were consumed in 1946 by the wood pulp industry. However, the volume of wood consumed annually for a seven-year period up to 1944 was approximately 120,000,000 cubic feet; consequently a substantial increase in the use of pulpwood is essential for the future cultural expansion in Japan. The preferred species are the spruce and fir (yezomatsu and todomatsu), which grow abundantly in Hokkaido, and the red and black pines (akamatsu and kuromatsu) of Old Japan. Other species used for pulping include beech and hemlock.
2. A substantial increase in the rayon industry is essential and the production of kraft pulp, both unbleached and bleached, will become a necessity if Japan is to have strong papers of relatively high quality.
3. The following table shows the 1946 production of the various types of pulp produced and the cubic feet of pulpwood consumed:

PRODUCTION AND CONSUMPTION OF PULPWOOD

Type of Pulp	1946 Production in short tons	Conversion Factor short tons to cu ft solid wood	Cubic Feet Solid Pulpwood
Groundwood	138,477	100	13,847,700
Sulfite	69,212	200	13,842,400
Kraft	6,466	165	1,066,890
Rayon	11,632	220	2,559,040
Soda	1,012	190	192,280
TOTAL	225,799		31,508,310

(g) Bamboo

1946 PRODUCTION

Moso species	2,255,000 pieces
All other species	4,437,000 bundles

Note: Moso species of bamboo is marketed by the piece, while all other species of bamboo are sold as a bundle. A bundle consists of a number of stems forming a unit 20 to 25 inches in circumference, measured 4-1/2 feet above the severed end.

(3) Fuelwood

FUELWOOD PRODUCTION 1946
(Unit 1,000 cu ft solid wood)

	Firewood	Wood for Charcoal a/	Total
Demand	473,000	606,000	1,079,000
Production	214,000	342,000	556,000
	45.2	56.5	51.6

a/ The figures given are for solid wood for conversion to charcoal. Solid wood converts to charcoal at the rate of 260 cubic feet of solid wood for one metric ton of charcoal. Annual charcoal requirements are slightly more than two million metric tons.

Note: Ratio of fuelwood production to production of all other wood products is 1.7 to 1 or 62.5 percent of total wood production.

MINOR BY-PRODUCTS COLLECTED ANNUALLY

Edible mushrooms	10,000 metric tons
Edible bamboo shoots	20,000 - 30,000 metric tons
Edible nuts	5,000 - 10,000 metric tons
Cork bark	10,000 metric tons
Bark of cedar and cypress	75,000,000-85,000,000 sq ft

Wax, lacquer, resin and wood tar are also collected.

g. Forest Research

(1) Forest research covers a wide range of activities, including utilization, protection, soils, silviculture, technology, management, meteorology, and by-products. Japanese researchers are fully conscious of the desirability of improving forest areas and utilization of the products. Some projects do not give the impression of having immediate practical value until it is realized that there are shortages of many commodities in Japan, necessitating development of substitutes.

(2) Forest experiment stations have been established to conduct programs under the supervision of the Imperial Household, national and prefectural governments and universities. Forest product experiments are pursued by private industrial laboratories seeking better utilization practices in their manufacturing processes.

(3) Forest experiment stations are located at:

(a) Imperial Forest and Estates Bureau, Tokyo and Hokkaido
(b) Bureau of Forestry, Ministry of Agriculture and Forestry, Tokyo
(c) Prefectures: Fukuoka, Hokkaido, Hyogo, Kagoshima, Shimane, Toyama, Wakayama and Yamanashi
(d) Imperial Universities: Hokkaido, Kyoto, Kyushu and Tokyo
(e) Industry: Several major wood using manufacturers have established private wood products experiment laboratories

4. MINERALS

a. Japan Poor in Mineral Resources

(1) In all except a few commodities the resources and production are inadequate for her own needs. Japan did, however, build a large refining and processing industry, which, although dependent on imports of raw materials, yielded finished products for her own use and for export.

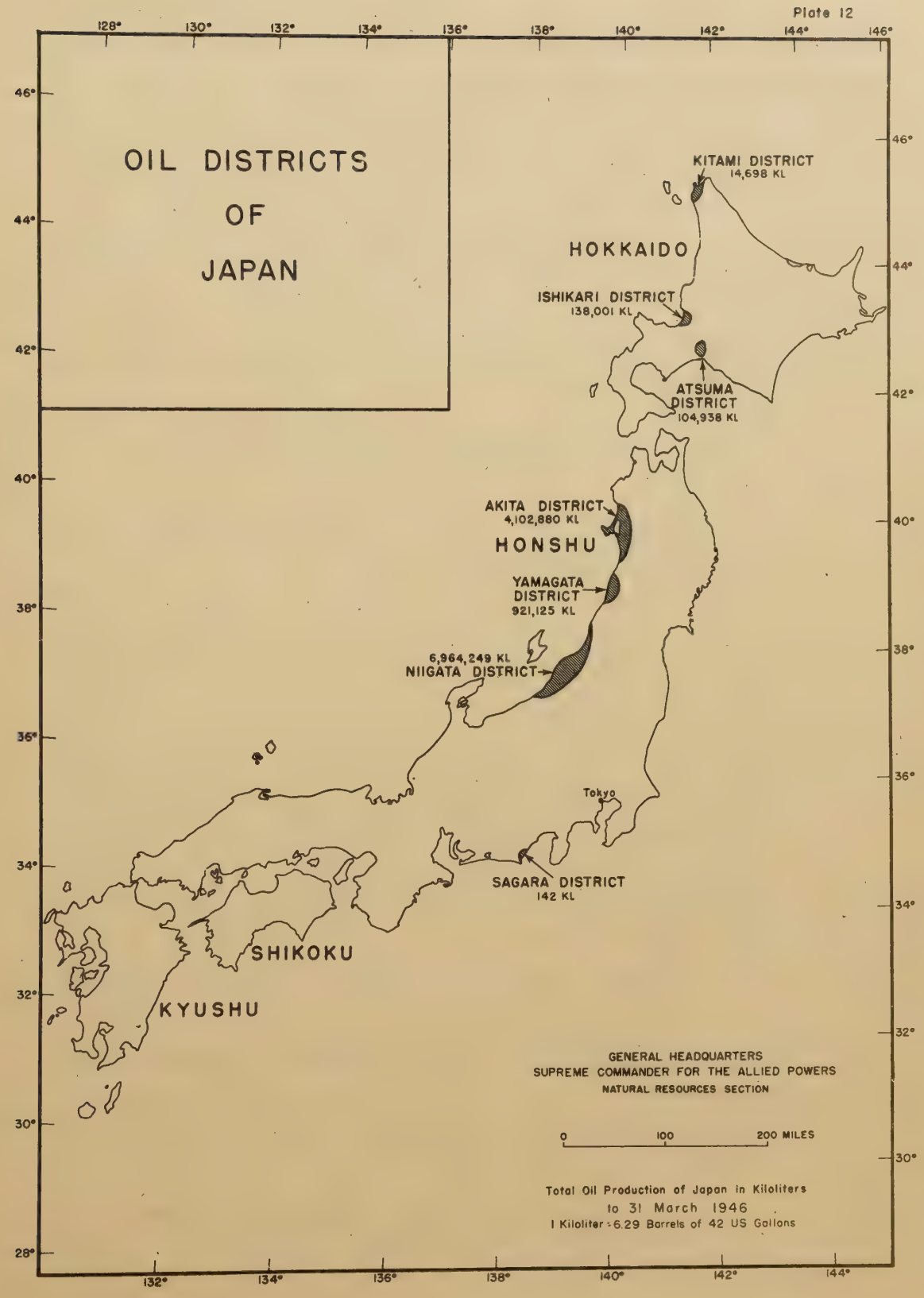
b. Inadequate Mineral Resources

(1) Petroleum (See Plate 12)

(a) Three major producing areas - Akita, Yamagata, and Niigata districts in northwestern Honshu
(b) Present production about 1,400,000 barrels from about 4,000 producing wells. This production is about 10 percent of civilian requirements in 1935.

(2) Lead, manganese, tungsten, molybdenum, fluorite, nickel, cobalt, antimony, mercury, vanadium, titanium, iron, asbestos, graphite, gypsum, tin and other minerals are produced in insufficient quantities. No phosphate, potash, or rock salt. Pan salt is produced in sufficient quantity to provide for about 50 percent of Japanese needs. Lack of phosphate and potash is

Plate 12


OIL DISTRICTS
OF
JAPAN
KITAMI DISTRICT
14,698 KL
HOKKAIDO
ISHIKARI DISTRICT
138,001 KL
ATSUMA
DISTRICT
104,938 KL
AKITA DISTRICT
4,102,880 KL
HONSHU
YAMAGATA
DISTRICT
921,125 KL
6,964,249 KL
NIIGATA DISTRICT
Tokyo
SAGARA DISTRICT
142 KL
SHIKOKU
KYUSHU
GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
NATURAL RESOURCES SECTION
0 100 200 MILES
Total Oil Production of Japan in Kiloliters
to 31 March 1946
1 Kiloliter = 6.29 Barrels of 42 US Gallons

particularly critical in view of the large quantities required for fertilizer.

c. Adequate resources (See Plate 13)

(1) Copper: Production has exceeded 70,000 metric tons of refined copper per annum from 1935 to 1944, inclusive. Eighty percent of production from mines in Honshu.

(2) Zinc: Production of refined zinc has exceeded 22,000 tons each year since 1935. Ninety percent of productior from Honshu.

(3) Gold: Recent production of gold has been about 3.8 tons per year. The production has come from many widely scattered mines.

(4) Silver: Production has exceeded 200,000 kg since 1935. Japan was seventh in world production.

(5) Arsenic: Since 1935 production has exceeded 2,000 tons per year which is approximately enough for insecticides and other normal needs.

(6) Chromite: Since 1935 production has exceeded 33,000 metric tons annually. Nearly all production has come from southern Hokkaido and southern Honshu.

d. Resources in excess of needs (See Plate 14)

(1) Coal: The Japanese coal reserves have been estimated at 16,000,000,000 metric tons, of which 93 percent is bituminous, 4 percent semi-anthracite, and 3 percent lignite; peak production of 57,000,000 metric tons in 1940 was achieved under government subsidy and is not an index of peacetime producing capacity. The principal coal fields are:

(a) Northern Kyushu fields produce over one-half total output
(b) Hokkaido fields, chiefly Ishikari
(c) Honshu fields, chiefly Joban and Yamaguchi fields

(2) Sulfur and pyrite: Sulfuric acid production is estimated to have reached a maximum of 3,800,000 tons in 1943.

(3) Cement: During the war Japan produced more than 4,000,000 metric tons per year.

Plate 13

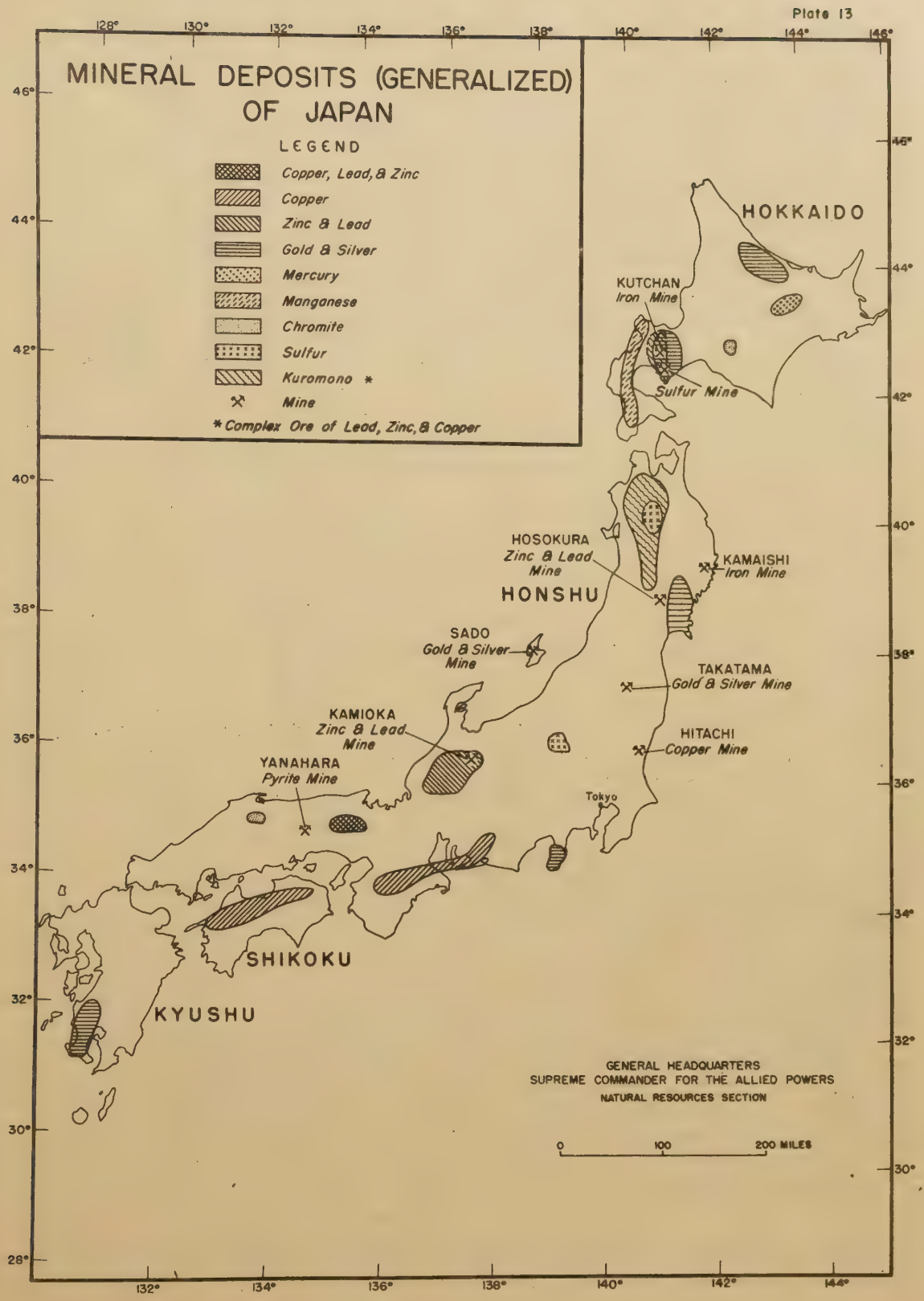

MINERAL DEPOSITS (GENERALIZED) OF JAPAN
LEGEND
Copper, Lead, & Zinc
Copper
Zinc & Lead
Gold & Silver
Mercury
Manganese
Chromite
Sulfur
Kuromono *
Mine
* Complex Ore of Lead, Zinc, & Copper
HOKKAIDO
KUTCHAN
Iron Mine
Sulfur Mine
HOSOKURA
Zinc & Lead Mine
KAMAISHI
Iron Mine
HONSHU
SADO
Gold & Silver Mine
TAKATAMA
Gold & Silver Mine
KAMIOKA
Zinc & Lead Mine
HITACHI
Copper Mine
YANAHARA
Pyrite Mine
Tokyo
SHIKOKU
KYUSHU
GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
NATURAL RESOURCES SECTION
0
100
200 MILES
128°
130°
132°
134°
136°
138°
140°
142°
144°
146°
46°
44°
42°
40°
38°
36°
34°
32°
30°
28°

Plate 14

COAL FIELDS OF JAPAN
COAL FIELD
LIGNITE FIELD
HOKKAIDO
Sapporo
Aomori
HONSHU
EASTERN DISTRICT
JOBAN FIELD
WESTERN DISTRICT
Tokyo
Osaka
YAMAGUCHI FIELD
Fukuoka
SHIKOKU
KYUSHU
Miyazaki
GENERAL HEADQUARTERS
SUPREME COMMANDER FOR THE ALLIED POWERS
NATURAL RESOURCES SECTION
0 100 200 MILES
128° 130° 132° 134° 136° 138° 140° 142° 144° 146°
46° 44° 42° 40° 38° 36° 34° 32° 30° 28°

(4) Water resources: The Japanese have large resources of water and have utilized their surface water to a high degree.

(a) Streams are short, with high gradients; because of large rainfall, they carry a large volume of water.

1. Electric power potential for Japan is estimated at 10,000,000 kw
2. Largest hydroelectric plant is on the Shinano river at Tomaru-mura, Niigata Prefecture - 165,000 kw
3. Many small-scale irrigation projects

e. Plant Capacity for Smelting and Reduction in Excess of Needs

(1) Steel: 5,887,000 metric ton maximum production in 1943 To achieve sufficient production, imports of high-grade iron ore or pig iron were necessary.

(2) Ferroalloys: Capacity proportionate to steel capacity

(3) Sulfuric acid: 3,800,000 metric tons maximum production in 1943.

(4) Magnesium: 2,903 metric tons maximum production in 1944

(5) Aluminum: 114,057 metric tons maximum production in 1943

(6) Superphosphate: 1,639,000 metric tons maximum production in 1939

(7) Copper refining: 122,000 metric tons maximum production in 1943

f. Research and Education

(1) Research in mining and geology is on a small scale compared to similar research in the United States. The relatively low potential of scientific personnel made it necessary for the capable Japanese scientist to divide his efforts between numerous assignments. The Imperial universities, where most Japanese scientists receive their training, are inferior to the average American state university in both faculty and equipment. Research lacks continuity between the academic and applicatory phases.

(2) Scientific research in Japan is largely under the control of the Japanese government through agencies within the Ministry of Education and government ownership.

(3) Important research institutions are the Imperial Geological Survey, the Imperial Universities of Tokyo, Hokkaido, Tohoku, Kyoto, and Kyushu, and laboratories of the Mitsubishi Mining Company, Ltd. Researches in sciences related to mining and geology are made at the Yawata Technical Research Institute and other metallurgical laboratories maintained by the Japan Iron and Steel Company, Ltd, the Japan Steel Works, and the Kobe Steel Works, the Institute of Physical and Chemical Research, the Chemical Industrial Research Laboratory, and the Imperial universities.

5. WILDLIFE

a. Although wildlife was well protected in feudal days, increasing territorial pressure from the expanding human population has caused it to decline steadily since 1868. Heedless exploitation during World War II brought all wildlife to a critical state. Many species of economic and scientific value are in danger of extermination.

b. The decline in receipts from wildlife in the last two decades has been marked. Ninety-five percent of the 200,000 licensed hunters in 1925 made all or a major part of their living hunting. Today, with only half the number of hunters, none is able to earn his living from it. A small duck-netting preserve now averages 5,000 ducks a year. In 1926 it produced 200,000. Up to 1925 one village in Gifu Prefecture marketed 500 barrels of pickled thrushes annually. It has had none to ship since 1942. Japan abrogated the International Fur Seal Treaty in 1946 and has conducted legal pelagic sealing since. Even this has been insufficient to bolster receipts from the overworked fur industry.

c. The mediaeval game laws, unchanged since 1922, never favored a sustained annual yield. A six-month open season, spring killing, and such destructive hunting methods as netting, trapping, and liming were allowed. Species protected elsewhere in the world as insect destroyers and song birds were slaughtered for food and sport. Lax enforcement nullified what good these laws might have done. The "balance of nature" has been badly upset, as insect epidemics attest. After stripping the guano, sea-bird colonies were despoiled by egging and shooting, preventing future deposition of fertilizer.

d. Strict conservation measures are needed to restore wildlife, regain the benefits formerly harvested from it, and establish a sustained yield. Corrective regulations have been promulgated by the Ministry of Agriculture and Forestry.

Section IV

RAW MATERIALS AND JAPAN'S PEACETIME ECONOMY

1. JAPAN'S ROAD BACK - TO WHAT?

a. Both the Allied Forces and the Japanese government have a problem which complicates every plan and enters every decision. What is the character of the economy toward which Japan should be directed? Japan is on the road back - but back to what?

2. JAPAN'S FUTURE ECONOMY

a. A partial answer to those questions will be provided at the peace table, but an accurate final answer depends on still other features which will be difficult to predict at any time. Both types of complicating factors are illustrated even in so simple a decision as the determination of what and how much of a given commodity Japan needs to "sustain" her economy. Among them may be mentioned:

(1) Possible changes in the rate of population growth and rural-urban population shifts

(2) The difference between prewar and postwar peacetime requirements for consumer goods and raw materials

(3) The degree to which Japan's economy will be de-industrialized

(4) The economic effects of the geographic dismemberment of Japan (the loss of Korea, Formosa, Karafuto, and Manchuria)

(5) The fluctuations of an adjusting economy to postwar conditions

3. POTSDAM DECLARATION

a. In spite of the unpredictable aspects a rough approximation of Japan's future economy can be outlined. One of the guide posts in this respect is the Potsdam Declaration (26 July 1945), which contains this paragraph: "Japan shall be permitted to maintain such industries as will sustain her economy and allow the just reparations in kind, but not those which would enable her to rearm for war. To this end, access to, as distinguished from control of, raw materials shall be permitted. The eventual Japanese participation in world trade relations should be permitted".

b. The declaration, while general in content, clearly points to the fact that despite the limitations to be put on Japan's economy, it will be permitted to recover from its present low level. To do otherwise would be to condemn millions of Japanese to a below subsistence level, if not out-and-out starvation. When Japan's economy was purely agricultural, it supported a rather stable population of about thirty million people; the addition of forty million in less than a century has been made possible mainly by the growth of industry and foreign trade.

4. STUDIES OF JAPAN'S PAST PRODUCTION AND TRADE

a. In order to impart more specific meaning to the general principles laid down by the Potsdam Declaration, perhaps the most useful approach is the study of Japan's prewar basic economic features. This method may serve as a useful reference to the basic question under consideration: What is the economy toward which Japan should be directed?

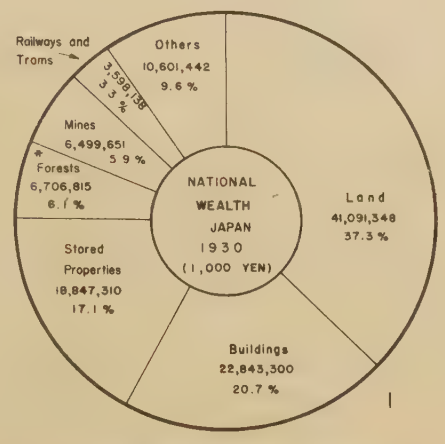
b. One method of analyzing Japan's economy is by means of the "pie-charts" reproduced here (See Plates 15 - 17). These are designed as illustrations for economic studies, each one representing a particular condition in the early 1930's. These studies do not offer definitive answers to problems facing the Allied Powers in shaping Japan's postwar economy, but they are essentials in formulating the answers.

c. Figure 1 (Plate 15) describes the material composition of Japanese national wealth and Figure 2, the occupation of her people in 1930. These comparisons are basic to an understanding of Japan's past economic attainments as well as its future aspirations.

d. Figures 3 and 4 (Plate 15) show the relative position of Japan in the world picture of the two most important food crops, rice and wheat. It is safe to assume that Japan's respective shares in world totals are not likely to change much in the immediate future; however, the output of these crops in Japan is likely to be larger than in the prewar years. Japan will not be in a position to import as much food as was the case in the past; she will have to rely upon a larger domestic production for a still greater share of food consumption.

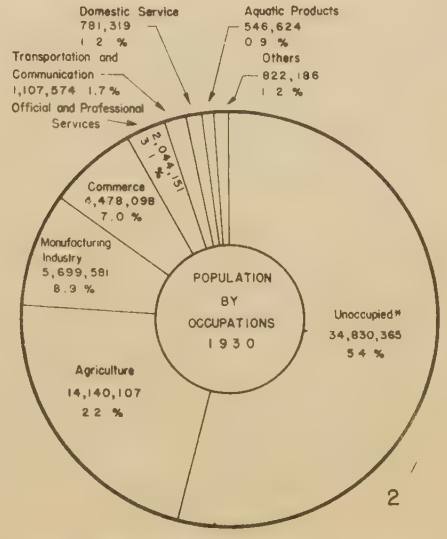
e. Industrial crops are illustrated in Figure 1, Plate 16 (tea) and Figure 2, Plate 16 (raw silk). Japan produced an average of about 50,000 metric tons of tea from 1930 to 1935 and 42,000 metric tons of raw silk. It should be emphasized, however, that the data on silk represents an optimum never to be attained again. In 1929 about two-fifths of Japan's exports consisted of raw silk. This trade was unique in that it did not depend on imported raw materials; but silk exports had greatly diminished by 1937, and they probably will not regain their former position in view of the competition from synthetic fibres.

FEATURES OF THE JAPANESE ECONOMY



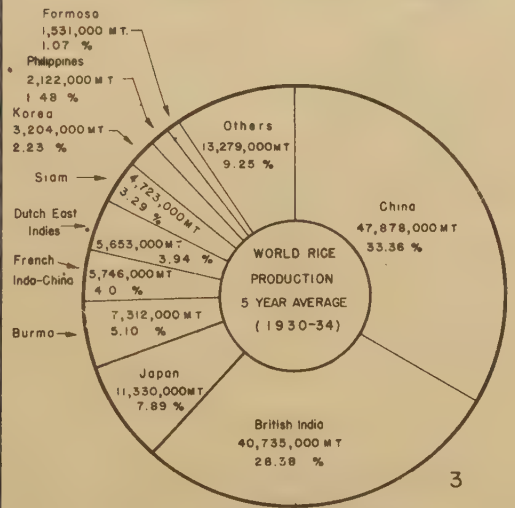
■ INCLUDES FIREWOOD, BAMBOO, FRUIT TREES, MULBERRY, AND TEA PLANTS IN ADDITION TO TIMBER

SOURCE: CABINET BUREAU OF STATISTICS, 1930 REPORT ON THE SURVEY OF NATIONAL WEALTH, DECEMBER, 1933

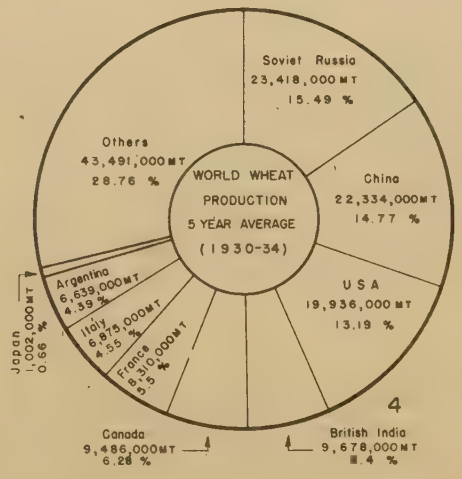


SOURCE: JAPAN YEAR BOOK 1939-1940

* CHILDREN, AGED, INFIRM, RETIRED, ETC, 84% OF WHOM ARE MEMBERS OF HOUSEHOLDS WHICH INCLUDE PERSONS CLASSIFIED ACCORDING TO VOCATIONS



SOURCE: U S D A AGRICULTURAL STATISTICS, 1944



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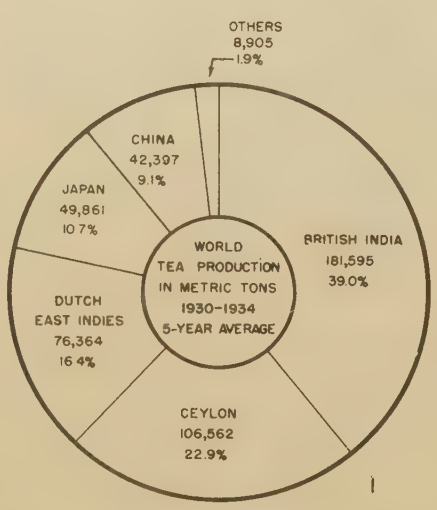
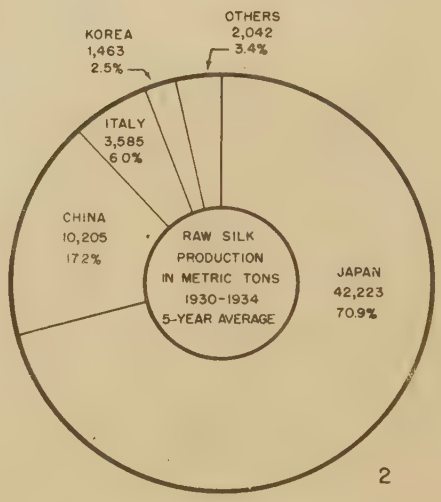
NATURAL RESOURCES SECTION

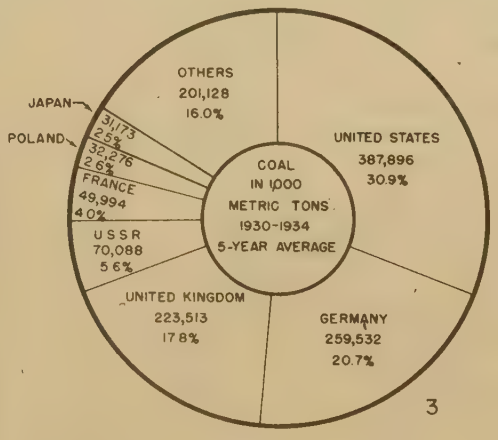
FEATURES OF THE JAPANESE ECONOMY



Figures for China and Ceylon indicate the amount of their exports. No figures are available on their production

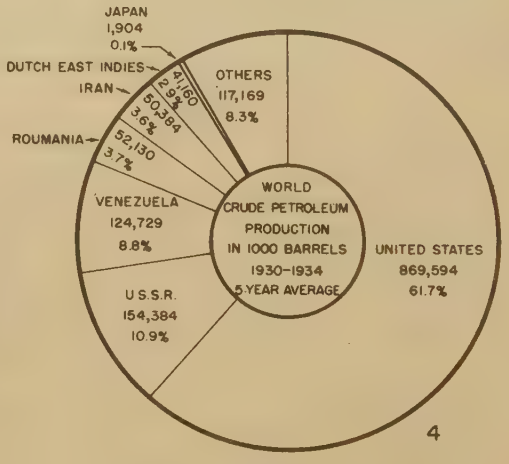


Japan Yearbook 1938, and by McDaniel in Korea



SOURCE: 1930-1931 production, "The General Conditions of Mining Industry in Japan in 1935," Mines Bureau, Japanese Ministry of Commerce and Industry

1932-1934 production "Minerals Yearbook of 1937; U S Dept of the Interior



SOURCE: Oil Weekly, Feb 11, 1946 taken from Minerals Resources & Minerals Yearbook. Production for Japan from data submitted by Imperial Oil Co.

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f. Similar attention may be given to other commodities shown on Plates 16 and 17 for the purpose of determining Japan's place in world economy as a producer of certain basic commodities.

g. Another fruitful approach to Japan's future economy is through study of its foreign trade, the country's very life-blood in the past fifty years. For reasons peculiar to Japanese economic and political development, the domestic market for manufactured goods has been modest at best. Japan concentrated her efforts, and successfully so, on foreign markets. Within three decades (1911-1939) foreign trade increased six-fold and trade with colonial possessions more than twenty-fold. This in turn shaped the type and size of Japan's industrial fabric.

h. What are Japan's foreign trade prospects now? In this regard one must mention Japan's loss of Korea, Formosa, Manchuria, Southern Sakhalin, South Sea Mandated territories, and its former privileges in Manchuria and China. This colonial trade, which was conducted in circumstances favorable to Japan, will now become foreign trade. Even if allowed to buy and sell on equal terms with other nations in her former colonial territories, Japan will no longer be able to mold the economy of those territories to its special advantage. The net effect will be still greater dependence upon foreign trade to pay for industrial raw materials and imported foodstuffs.

i. What are likely to be the responses of Japan's economy to these foreign trade prospects? Japan will doubtless attempt to reduce her food imports to a minimum by devoting more manpower to agriculture and fishing than before the war. In reality, however, the return from application of additional labor in these fields will be small. It seems probable then that the only solution left to her will be that of retracing part of the course followed in the two decades before the war, that of concentrating resources on consumer-goods industry. An accompanying effort would be the revival of export trade in those goods sufficient for the purchase of needed raw materials and food. But to succeed in that attempt Japan would have to create an export of these commodities far greater than she had before the war, for her population has grown and other sources of income (from colonial and foreign investments and merchant marine) will no longer be available.

j. Japan will be faced with most serious obstacles in her efforts to revert to the former industrial structure, partly because raw silk has lost its former pre-eminent position in international trade, and partly because of the fear of Japanese competition on the part of Western industries. The most that now appears likely is a modest participation in international trade, and rehabilitation along similar lines in traditional manufacturing industries. That much was guaranteed by the Allied Powers when they made it clear in the Potsdam Declaration that they would allow Japan eventually to participate in international trade. The United States repeated this in the "U.S. Initial Post-Surrender Policy

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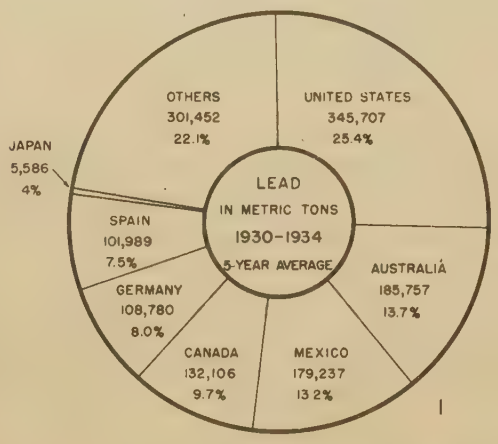
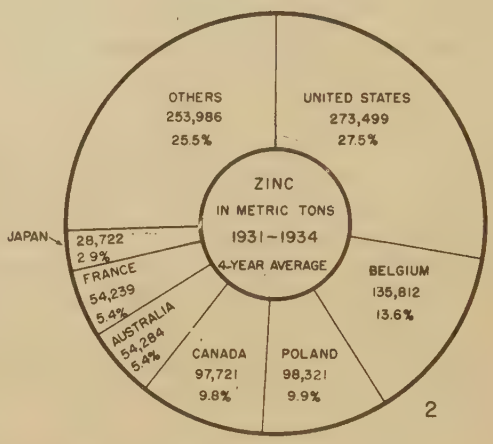
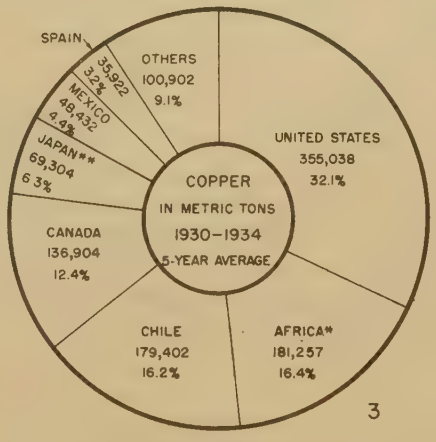
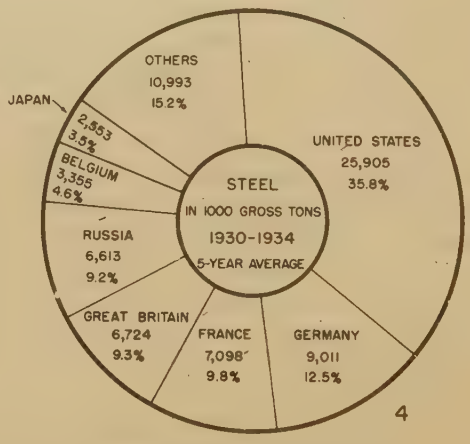




SOURCE: The Mineral Industry During 1938, by G.A. Roush, McGraw Hill Book Co, 1939





*Includes Belgian Congo + N Rhodesia + S Africa
**Figures for Japan cover 1932-1934 only

SOURCE: Minerals Yearbook 1937
Conditions of Japan's' Mining Industry 1935

SOURCE: Mineral Industry During 1938, Vol 47, Edited by G.A. Roush, McGraw Hill Publishing Co

Note: Statistics for lead, zinc, and copper are for smelter and refinery production.

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for Japan", of 22 September 1945, which reads: "Japan shall be permitted eventually to resume normal trade relations with the rest of the world during occupation and under suitable controls. Japan will be permitted to purchase from foreign countries raw materials and other goods that it may need for peaceful purposes, and to export goods to pay for approved imports."

5. CONCLUSIONS ON REHABILITATION

a. Japan, in the forseeable future, may reasonably look forward to no more than a partial revival of its former manufactural exports. Because of reduced exports, the loss of colonies, and the loss of shipping and foreign investments, raw materials imports are likely to be less than they were in prewar years. Because the population has increased since 1939, raw material imports may be considerably less per capita than before. While Japan should be mindful of all possibilities for increasing manufactural exports by developing new and superior products, Japanese statesmen, scientists, and business men will have to examine additional possibilities for improvements in the lot of their countrymen. Possibilities will include, among others:

(1) Development of higher yielding staple crops

(2) Substitution of domestically produced raw materials for imported, wherever practical

(3) Elimination of raw material waste in manufacturing

(4) Careful attention to conservation of resources

(5) Attention to synthetically produced, as constrasted with naturally produced, materials

(6) Examination of the means for reducing the rate of population growth

b. Among all that is indistinct in Japan's future, one thing is clear: the achievement of any substantial improvement in the Japanese standard of living will come only from many-sided effort. Japan has had two periods in its recent history, one in which it looked exclusively inward, and the other in which it looked primarily outward. Now it must do both, but hopes will best be placed on technical improvement and adaptation to the limitations of the resources on its islands. For Japan, more than at any time since Commodore Perry's visit, will have to live at home. Occupational policy may be planned on that constant, at least, and it should recognize that Japan's future lies in cultivation of physical science, social science, and the arts of engineering and planning.

Section V

SELECTED REFERENCES

1. PRELIMINARY STATEMENT

a. Several thousand publications deal with the various fields of the natural resources of Japan. Most of these are technical in scope; others are generalized and inaccurate; still others include lengthy bibliographies. The references with recorded titles constitute a sample of the unclassified literature available in the library of the Natural Resources Section, Mitsubishi Shoji Building, Room 504. Many classified publications are available to authorized personnel. The library number prefaced by the initials "NRS" is given for each reference.

b. An exceptionally good library is the Economic Research Council Library, formerly the Mitsubishi Research Library. It contains 60,000 volumes, 20,000 of which are in languages other than Japanese. It also contains a wide variety of periodicals of recent years. Books and publications may be used in the reading room of the library. A complete card catalogue index is available to library users. The reference for publications in this library is ERC.

d. Copies of the "Catalogue of Publications in the Natural Resources Section Library" are available on request to authorized personnel.

2. ORIENTATION

a. "Japan, Its People, Its History, Its Land, Its Work", reprinted from the Encyclopedia Britannica. (Deals with geography, commerce and industry, and other topics, with emphasis on history.) NRS No 1658

3. GAZETTEERS AND MAPS

a. "Gazetteer to Maps of Japan". Scale 1:250,000, published by Army Map Service, November 1944 (Discussion of romanization of Japanese and alphabetical list of place names, with latitude and longitude, and index to published maps). NRS No 373.

b. "Gazetteer to Maps of Central Honshu". Scale 1:50,000, published by Army Map Service, April 1945. NRS No 1786.

c. "Gazetteer to Maps of Northern Honshu. Scale 1:50,000, published by Army Map Service, May 1945. NRS No 374.

d. "Gazetteer to Maps of Kyusnu". Scale 1:50,000, published by Army Map Service, Second Edition, July 1945. NRS No 375.

e. "Gazetteer to Maps of Hokkaido and Karafuto". Scale 1:50,000, published by Army Map Service, January 1945. NRS No 376.

f. "Gazetteer (No 14) Japan". Hydrographic Office publication No 894, March 1945. NRS No 380.

4. GENERAL

a. "Asia's Lands and Peoples" by George B. Cressey published by the McGraw Hill Book Company, New York, 1944. (A geography of Asia with special emphasis on Japan, China, The Soviet Union, and India) NRS No 1048.

b. "Japanese Trade and Industry, Present and Future" by Mitsubishi Economic Research Bureau, 1936. (Overall picture of Japanese industry, including agriculture, fisheries, mining, and electric power, with a list of principal statistical resources.) NRS No 601.

c. "Japan: A Physical, Cultural, and Regional Geography", by Glenn T. Trewartha, published by The University of Wisconsin Press, 1945. (The most comprehensive textbook on the geography of Japan published to date.) NRS No 1788.

d. "Japan: A Geographical View", by Guy-Harold Smith and Dorothy Good, published by American Geographical Society, New York, 1943, pp 104, 3 figures in text; 2 plates (maps). (Good but superficial summary; inaccurate in details and some internal discrepancies.) NRS No 843.

e. "Japan: Its Resources and Industries", by Clayton D. Carus and Charles L. McNichols, published by Harper and Brothers, New York, 1944. NRS No 1106.

f. "Monthly Summation of Non-Military Activities", issued by the Supreme Commander for the Allied Powers. (These reports include brief discussions of the food position, fertilizer, reactivation of the fishing industry, sawmills, timber reserves, coal, and related topics, with many maps and charts)

No 1	September-October 1945	NRS No 1750
No 2	November 1945	NRS No 973
No 3	December 1945	NRS No 1751
No 4	January 1946	NRS No 1468
No 5	February 1946	NRS No 291
No 6	March 1946	NRS No 716
No 7	April 1946	NRS No 1025
No 8	May 1946	NRS No 1089
No 9	June 1946	NRS No 1110
No 10	July 1946	NRS No 1105
No 11	August 1946	NRS No 1153

No 12	September 1946	NRS No 1192
No 13	October 1946	NRS No 1923
No 14	November 1946	NRS No 330

g. "Scientific Japan, Past and Present". (This book was prepared in connection with the Third Pan-Pacific Science Congress, Tokyo, 1926, and includes technical articles by several authors dealing with geography, climate, geology, flora, fauna, and earthquakes.) NRS No 886.

h. "The Strategy of Raw Materials", by B. Emeny, published by the Macmillan Co, 1938. (Recommended to one who is interested in a study of the strategic raw material position of the United States before World War II in contrast to Japan and other powers.) NRS No 1819.

i. "Agricultural Regions of Asia, Part VII, The Japanese Empire" by R. B. Hall, "Economic Geography", Vol 10, No 4, October 1934. (Concise treatment of climate and physiographic divisions, with emphasis on agriculture.) NRS No 1752.

5. TERRAIN

a. "Landforms of Japan", by R. B. Hall and Akira Watanabe, published in Papers of the Michigan Academy of Science, Arts, and Letters, Vol 18 (1933); pp 157-207, 6 pls, 5 fgs in text. (The basic study in English of the physiography of Japan.) NRS No 845.

6. CLIMATE

a. "The Climate of Japan", NAVAER 50-IR-60 (1944), republished from the Bulletin of the Central Meteorological Observation of Japan, Vol 14, No 2, 1931; pp 416, 35 pls, figs in text. (Comprehensive treatment; many statistics.) NRS No 508.

7. AGRICULTURE

a. "Aspects of Japanese Agriculture", by S. Nasu, published by Institute of Pacific Relations, New York, 1941. (Social, and physical conditions of land utilization, distribution of land for different uses, general description of Japanese agriculture utilization of forest and waste land changes in cultivated area and the rate of exploitation, annual frequency of cultivated land utilization, productive power of cultivated land, agricultural economy and farmer's living conditions, land utilization, and population.) NRS No 1781.

b. "The Teas of Uji", by Joseph A. Russell. Econ Geog 16:211-224, 1940. (This report deals with specialized tea culture near Uji-mura) NRS No 707.

c. "Farmers for Forty Centuries", by F. H. King, published by Harcourt, Brace and Company, 1927. (This interesting classic is recom-

mended to those who wish an understanding of farming in monsoon Asia.) ERC No VIII, 1137.

d. "Agricultural Occupation of Hokkaido", by D. H. Davis, Economic Geography, Vol 10, No 4, October 1934. (Topography, soils, climatic conditions, crops, and crop systems.) NRS No 1752.

e. "Rice Economy of Monsoon Asia", by Wickizer & Bennet, published by Food Research Institute, 1941, Stanford University. (A detailed analysis of the influence of rice on the economic life in the monsoon area of Asia.) NRS No 1853.

8. FISHERIES

a. "Fishing Industry of Japan", Civil Affairs Training School, University of Chicago, 1945. (General report on all phases of Japanese fishing.) NRS No 624.

b. "Illustrations of Japanese Aquatic Plants and Animals" in two volumes, published by The Fisheries Society of Japan, Tokyo, 1931. (A compilation of more than 700 illustrations in natural color with descriptions and explanations in English and Japanese.) NRS No 1197.

9. FORESTRY

a. "Forest Resources of the World", by R. Zon and W. N. Sparhawk, Vol 1, 1923. (Japan treated on pages 437-449; forest area, character of forest, character of ownership, annual growth, cut and consumption, exports and imports, forest industries, forestry movement, probable future.) NRS No 634.

b. "Japan, Forest Resources, Forest Products, Forest Policy", by W. N. Sparhawk, May 1945. (Mimeographed compilation dealing with extent and character of the forests, ownership, timber, utilization, management, policy, and administration, with a list of selected references.) NRS No 678.

c. "Forest Resources of Japan", by Mitsunaga Fujioka, Proc Fifth Pacific Science Congress, Vol 2, pp 961-971, 1934. (Concise treatment, with statistics.) NRS No 1661.

10. MINERALS

a. "Geology and Mineral Resources of the Japanese Empire", Imperial Geologic Survey, 1926, pp 85-96. (General geology, but includes data on mineral resources, including coal and petroleum, as of that date.) NRS No 187.

b. "Japan's Oil Supplies", by Louis E. Frechtling, published in "Amerasia", Vol 5, July 1941, pp 97-201. (Strategy in connection with Japanese foreign oil supplies.) NRS No 189.

c. "Outline of Geology of Oil Fields of Japan", Proc Pan Pacific Science Congress (Australia), Vol 2, 1923, #95, pp 1180-1206. (Brief general description of Japanese oil field geology, followed by detailed description of largest fields.) NRS No 864.

d. "Mineral Resources of Japan", Foreign Minerals Survey, Vol 2, No 5, October 1945, pp 118, U S Dept of the Interior, Bureau of Mines. (A regional review of mineral resources, production, and trade.) NRS No 1966.

11. STATISTICS

a. "The Japan Year Book, 1943-44", published by the Foreign Affairs Association of Japan, 1944. (Summary of statistics for years 1936-1944.) NRS No 511.

b. "Resume Statistique de l'Empire du Japon, 49e Annee", published by Bureau de la Statistique Generale au Cabinet Imperial, Tokyo, 1935. NRS No 793.

c. "The Orient Year Book 1942", published by The Asia Statistics Co, Tokyo. NRS No 1707.

d. "Japanese Economic Statistics", published monthly by the Economic and Scientific Section, SCAP, (first issue Aug 1946). NRS No 1143.

12. GUIDE BOOKS

a. Numerous guide books have been issued by various agencies. (Representative ones are those by the World Engineering Congress, 1929; Tokyo, Nikko, Kyoto, Nara, etc.) NRS Nos 1579-1596.

13. PREFECTURAL STUDIES

(Note; This section cannot be completed until action of Documents Downgrading Board is published. Submitted for declassification on 5 Nov 46).

14. PERIODICALS

a. "Far Eastern Survey". (This periodical contains articles on a wide variety of topics. ERC, not numbered, and NRS No 1746 (incomplete).

b. "The Oriental Economist". (Weekly economic magazine published in Tokyo. Many statistics, some of doubtful authenticity, are presented. NRS No 1708.

c. "Japan Fertilizer Weekly", published by the Japan Fertilizer Co, Ltd. (This periodical was first published on 10 April 1946 as a weekly digest of current information on fertilizer. As such it is a good summary of action by SCAP and Japanese fertilizer agencies.) NRS No 1044.

15. BIBLIOGRAPHIES

a. "An Annotated Bibliography of the Southwest Pacific and Adjacent Areas", Vol III, Allied Geographical Section, 8 August 1944. (Contents and maps, if any, are noted.) NRS No 493.

b. "Geographic References in Harvard Libraries on Japan Proper", by Hubert G. Schenck, 1944. (Annotated) NRS No 604.

16. NATURAL RESOURCES SECTION REPORTS 5/

a. Unclassified reports

Report No 1	Possibility of Reparations from Japan's Natural Resources - 31 Oct 45
Report No 3	Basic Problems of the Coal Mining Industry in Japan - 14 Nov 45
Report No 4	Culture and Utilization of "Kozo" and "Mitsumata" for the Manufacturing of High-Grade Paper in Japan - 24 Nov 45
Report No 5	Ownership and Administration of Japan's Forests - 27 Nov 45
Report No 6	Administration of the Japanese Mining Industry - 1 Dec 45
Report No 7	Rice Crop Losses from Adverse Weather Conditions in Japan Proper in 1945 - 11 Dec 45
Report No 8	Stockpiles of Logs and Lumber in Japan - 11 Dec 45
Report No 9	Unusual Materials as Foodstuffs in Japan - 17 Dec 45
Report No 11	Estimate of the Forestry Situation in Hokkaido - 28 Dec 45
Report No 12	Sources of Phosphate for Japan - 31 Dec 45 Supplement to NRS Report No 12 (Sources of Phosphate in Japan) - 15 Mar 46
Report No 13	Forest Areas, Forest Composition, and Standing Timber by Volume in Japan - 10 Jan 46

5/ Reports not listed are classified.

Report No 14	Production of the Fishing Industry of Hokkaido - 20 Jan 46
Report No 15	Livestock Feed Requirements for Japan Proper - 21 Jan 46
Report No 16	Soils of Kyushu and Southern Honshu - 26 Jan 46
Report No 17	Wartime Administration of the Japanese Mineral Industry - 29 Jan 46
	Oil Fields of Hokkaido (Preliminary Field Investigation)
Report No 18	Oil Fields of Hokkaido - 2 Feb 46
Report No 19	Soils of Hokkaido and Northern Honshu - 4 Feb 46
Report No 20	Vegetable Seeds in Relation to Food Supply in Japan - 14 Feb 46
Report No 21	The Coal Industry of Japan in Recent Years - 20 Feb 46
Report No 22	Japanese Fishing Areas - 25 Feb 46
Report No 23	Korean Mineral Industry Statistics - 18 Mar 46
Report No 24	Foodstuffs Used in the Manufacturing of Alcoholic Beverages in Japan - 22 Mar 46
Report No 25	Characteristics of the Japanese Agricultural Co-operative Association - 27 Mar 46
Report No 26	Estimate of the Charcoal and Firewood Situation in Japan - 1 Apr 46
Report No 27	Production, Consumption, and Stockpiles of Bamboo - 5 Apr 46
Report No 28	Estimate of the Pulpwood Situation in Japan - 15 Apr 46
Report No 29	The Honkeiko Colliery Disaster - 18 Apr 46
Report No 30	The Livestock Industry in Japan - 18 Apr 46
Report No 31	The Japanese Salmon Industry - 25 Apr 46
Report No 32	Lumber Production in Japan - 26 Apr 46
Report No 33	Commercial Fertilizers in Korea - 6 May 46
Report No 34	Veneer and Plywood Manufacturing in Japan - 8 May 46
Report No 35	The Mineral Industry of Korea in 1944 - 14 May 46
Report No 37	Fisheries Education and Research in Japan - 31 May 46
Report No 38	A Survey of Timber Control in Japan Since 1941 - 10 Jun 46
Report No	Special Report - Extracts from a Survey of Timber Control in Japan Since 1941 - 24 May 46
Report No 39	Hydroelectric Power in Japan - 12 Jun 46
Report No 40	Forestry Situation in Kyushu - 17 Jun 46
Report No 41	Japanese Research Institutions in the Field of Mining and Geology - 25 Jun 46
Report No 42	The Japanese Agar-Agar Industry - 28 Jun 46

Report No 43 Hydrology of Japan - 1 Jul 46
Report No 44 Mineral Resources of Japan Proper 1925 - 1945 - 5 Jul 46
Report No 45 Statistics of Fruit Production in Japan 1926-1946 - 12 Jul 46
Report No 46 The Imperial Forests of Japan - 19 Jul 46
Report No 47 The Forestry Situation of Southern Korea - 26 Jul 46
Report No 48 Forestry and Forest Industries in Shikoku - 31 Jul 46
Report No 49 Japanese Petroleum Drilling Methods and Equipment - 7 Aug 46
Report No 50 Iron and Steel Metallurgy of the Japanese Empire - 31 Oct 46
Report No 51 Forestry Education in Japan - 16 Aug 46
Report No 52 Economic Controls in the Japanese Coal Industry - 21 Aug 46
Report No 53 Dolomite Resources in Japan - 26 Aug 46
Report No 54 Cobalt Resources in Japan - 31 Aug 46
Report No 55 Fertilizers in Japan - 10 Sep 46
Report No 56 The Wood Pulp Industry in Japan - 15 Sep 46
Report No 57 Nickel Deposits in Japan - 30 Sep 46
Report No 58 The Forestry Situation in Northern Honshu - 31 Oct 46
Report No 59 The Agricultural Experiment Stations of Japan - 15 Oct 46
Report No 60 Limestone, Lime, and Gypsum Resources in Japan - 15 Nov 46
Supplement to NRS Report No 60 - Descriptions of Gypsum Producing Areas and Mines
Report No 61 Tungsten and Molybdenum Metallurgy of Japan - 30 Nov 46
Report No 62 Ferroalloy Metallurgy of Japan - 5 Dec 46
Report No 63 Glossary of Fisheries Terms - 23 Dec 46
Report No 64 Chromite Resources of Japan - 15 Jan 47
Supplement to NRS Report No 64 (Description of Chromite Producing Areas and Mines, 15 Jan 1947)
Report No 65 Zinc-Lead Resources of Japan - 30 Jan 47
Report No 66 Sulfur Resources of Japan - 10 Feb 47
Supplement to NRS Report No 66 (Description of Sulfur Producing Areas and Mines, 10 Feb 1947)
Report No 67 Barite Resources in Japan - 11 Feb 47
Report No 68 Fushun Coal Field, Manchuria - 17 Feb 47
Report No 69 Iron Ore Resources of Japan - 26 Feb 47
Supplement to NRS Report No 69 (Descriptions of Iron Ore Producing Areas and Mines, 26 Feb 1947)
Report No 70 Pyrite Resources of Japan - 4 Mar 47
Report No 71 Japanese Fishing Gear - 5 Mar 47
Report No 72 Molybdenum in Japan - 14 Mar 47

Preliminary Study No 1 - Formosan Metal and Mineral Statistics - Oct 46

Preliminary Study No 2 - Coke in Japan - Nov 46

Preliminary Study No 3 - Quality and Uses of Japanese Coal and Lignite - 31 Dec 46

Preliminary Study No 4 - Food Position of Japan for the 1947 Rice Year (As of 1 November 46) - 3 Feb 47

Preliminary Study No 5 - Japan's Big Fishing Companies - 13 Mar 47

Preliminary Study No 6 - Japanese Food Collection Program with Emphasis on Collection of the 1946 Rice Crop - 11 Mar 47